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Synergising youth empowerment and co-design to transform Pasifika youth into agents of social change: a novel approach to advance healthy lifestyles in Pasifika communities

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Dani Prapavessis

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Abstract

Current population health statistics demonstrate the need for innovative approaches to improve health outcomes and prevent non-communicable disease (NCD) for Pasifika peoples. This research builds off pilot studies on the effects of youth empowerment programmes to address obesity-related issues amongst Pasifika communities. It developed and tested an original model of co-design embedded within the youth empowerment framework of the Pasifika Prediabetes Youth Empowerment Programme. The programme was co-delivered with two community health service providers (one rural and one urban), employing Community-Based Participatory Research (CBPR) methodology. N=29 youth (aged 15-24 years) participated in eleven educational and capacity-building modules that comprised the empowerment and co-design components during weekly sessions from May-October 2018. At the end of the programme, the model of co-design generated two individualised community intervention action plans to reduce prediabetes in their communities.

This research employed a qualitative research design with four data collection techniques and thematic analysis to evaluate the effects of the tested programme. It used an original framework of social change to determine the impacts on the youth's values, knowledge, and behaviours as well as the community organisations, and the socio-cultural norms of each community. It also explicated the contextual considerations of programme uptake in each location.

Overall, this research illustrated that co-design is an effective addition to empowerment frameworks. It demonstrated how to operationalise co-design in a community-based setting with youth, and the tested model provided a practical framework to translate empowerment

outcomes into the community. The programme analyses also led to a more nuanced understanding of social change. This research developed a concept of the process of social change that can be used to inform future programme development and evaluation. This research suggests future translations of the programme to maximise uptake and postulates different community contexts and settings for delivery, beyond Pasifika prediabetes prevention.

Acknowledgements

Since I was a child, I always wanted to pursue a PhD. I didn't know the topic, nor the methods I'd employ, but I was intrigued by the notion I could advance a small part of the world's knowledge. Now, as I prepare my thesis, I appreciate the rarity of this experience. I have spent three formative years, studying a topic that continues to fascinate me, while learning about myself and my position in our broader ecosystem of life. I have endless acknowledgements to give, so here it goes.

First, thank you to my supervisors, Barry Borman and Riz Firestone, who provided me with this research opportunity. Barry and Riz have advocated on my behalf since 2015 and have continued to guide me through this academic endeavour. Riz, thank you for your passion for youth empowerment and belief in our programme. You have welcomed me into your home and onto this research team with open arms. Moreover, thank you to Massey university the Centre for Public Health Research for funding my studies and tuition. To staff at CPHR, you made my transition to Wellington seamless and ensured that no admin task remained outstanding – thank you.

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Ethical approval

This research received ethical approval from the Health and Disability Ethics Committee (17/CEN/289), New Zealand.

Thesis structure

This thesis contains six chapters. **Chapter 1** introduces the research topic and presents the specific research objectives. **Chapter 2** provides background information on prediabetes and substantiates why developing culturally relevant, social-change oriented healthy lifestyle interventions with Pasifika communities is a topic worthy of research. It introduces concepts and empirical approaches to youth empowerment, co-design, and relevant evaluation strategies for transformative youth programming. **Chapter 3** describes the methodological underpinning of this research and the specific methods employed. It describes the four data collection techniques and analysis methods and presents the framework of programme evaluation developed within this study. Last, and importantly, it introduces the community partners, the programme structure, and the sample of youth participants. **Chapter 4** presents the results of each analysis. **Chapter 5** discusses the results and describes the significance and implications of the research findings. It re-examines the research objectives and identifies areas of future research. Last, **Chapter 6** draws conclusions about the importance of the ideas and issues engendered throughout this thesis.

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Chapter 1: Introduction

Chapter 1 explicates the need for innovative approaches to improve health outcomes and prevent non-communicable disease (NCD) for Pasifika peoples. It introduces the youth empowerment and co-design approaches explored within this study, and identifies the four objectives of this research. It then describes the pilot research and introduces the larger research project which this research is embedded in, the *"Pasifika Prediabetes Youth Empowerment Programme"* (PPYEP). Last, it outlines the overarching thesis structure and chapters ahead.

This thesis frequently uses two terms: youth and Pasifika. "Youth" is used to describe individuals aged 15-24 years old, as per the United Nations definition (1), and "Pasifika" is used to describe the ethnicity of Pacific-Island peoples in New Zealand, encompassing both island-born and New Zealand-born Pacific peoples (2). It acknowledges the diversity among the Pacific nations and the unique cultural beliefs, values, traditions, language, social structure, and history that each country brings (3).

The research gap and objectives

Current health statistics for Pasifika peoples demonstrate a clear need for innovative approaches to develop effective health interventions. Pasifika peoples are disproportionately represented for nearly all poor health outcomes, and experience higher NCD prevalence, with obesity, prediabetes, and type 2 diabetes mellitus (T2DM), amongst the worst (2) (4). Existing research demonstrates that lifestyle interventions can effectively improve NCDs (5) (6) (7) (8) (9) (10) (11) (12) and that youth empowerment programmes are a promising approach to educate, inspire, and develop the public health capacities of youth (13) (14) (15) (16) (17) (18) (19). Yet, there is a gap in our understanding of how to modify such interventions/ programmes for unique priority groups, like Pasifika peoples (20), and how to develop youth in Pasifika health promotion, an often underutilised and misunderstood demographic (14).

This research has two purposes: first, to embed an original model of co-design within a youth empowerment framework and to deliver this programme within two Pasifika communities; and second, to evaluate the potential of the tested programme to develop Pasifika youth as agents of social change towards healthy lifestyles within their communities. This research employed a "*Community-Based Participatory Research"* (CBPR) methodology and qualitative study design. It encompassed four research objectives that structured the research design and organisation of this thesis:

Objective I: To develop a prediabetes health promotion programme that supports youth to become agents of social change by refining an existing youth empowerment programme and integrating within it, an original youth-based model of co-design.

Objective II: To co-deliver the programme with two Pasifika health service partners, adapting the programme to their community structure and cultural provisions.

Objective III: To develop and implement an original framework of social change to evaluate the impact of the programme.

Objective IV: To explicate the contextual considerations of programme uptake.

Building off existing research

This research stemmed from two pilot studies on Pasifika youth and health promotion by Principal Investigator, Riz Firestone, *"Chewing the Facts on Fat"* (CTFF) (2016), and the "*Youth Empowerment Programme"* (YEP) (2017), and was embedded within the *"Pasifika Prediabetes Youth Empowerment Programme"* (PPYEP) (2018-2021).

CTFF explored the perceptions of culture and health, and food purchasing behaviours of Pasifika youth in the Wellington and Auckland areas (13). Researchers interviewed a sample of 30 Pasifika youth participants about their conceptualisation of health and culture as well as the factors that influence their lifestyle choices. Then, participants recorded their food purchasing patterns over one week. After synthesising and analysing these data, Firestone et al. (2016) concluded that Pasifika youth are immersed within an obesogenic environment, live in high deprivation, and experience complex family obligations and commitments (13). CTFF highlighted that the future health and wellbeing of Pasifika youth remains inadequate and that obesity prevention programmes must consider the social-cultural interactions and

implications for Pasifika youth (13). It also substantiated that youth have an essential role within the development of sustainable and effective healthy lifestyle interventions; however, they are currently underutilised (13).

Informed by these findings, Firestone et al. (14) developed the YEP and research methodology to investigate the potential of Pasifika youth to advance obesity-related issues in their communities. The YEP's specific aims were to: (i) empower young Pasifika peoples' to gain public health knowledge and skills on behavioural, social, and cultural experiences of healthy living and lifestyles; (ii) develop the key features of health promotion "action plans"; and (iii) implement and evaluate the short-term success of these action plans (14). During the YEP, Pasifika youth in Wellington met once a week for two hours for eight months. Youth participants deepened their knowledge of the root causes of obesity and realised the broader implications of obesity for Pasifika people; they acquired skills of leadership, cooking, budgeting, and community-organisation to generate action plans that addressed obesity in their communities (14). The YEP demonstrated that interventions involving participants as equal partners of the research process are more effective at advancing health because they utilise existing strengths and adapt to specific needs within a community (14). It also determined that how to design and modify community-embedded healthy lifestyle interventions with youth remains an important area of future research (14). The YEP motivated future research to incorporate a practical tool, framework, or model, for example, within the programme to develop interventions with youth that could facilitate healthy lifestyles amongst the broader Pasifika community.

Based on CTFF and the YEP, Firestone and others developed the "*Pasifika Prediabetes Youth Empowerment Programme"* (PPYEP). The PPYEP implemented a youth empowerment programme in a collaborative partnership with two Pasifika communities to reduce the prevalence of prediabetes risk amongst Pasifika peoples. The "Healthier Lives–

He Oranga Hauora" funded the PPYEP [HRC 17-213] as one of the 11 challenges of the Ministry of Business, Innovation, and Employment's (MBIE) National Science Challenges (NSC). The NSC's objective was to support innovative research to significantly and equitably improve New Zealand's leading health issues (20).

The PPYEP had two overarching phases (Figure 1).

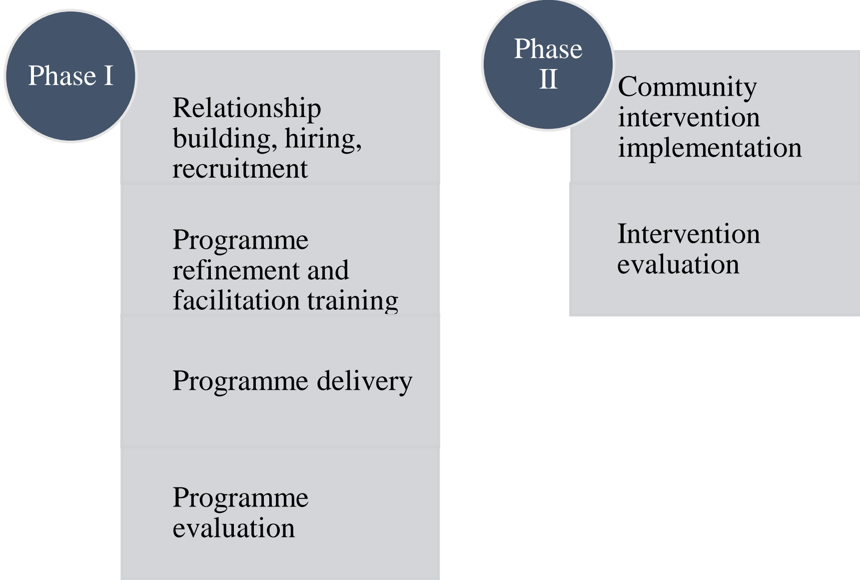


Figure 1: High-level structure of the Pasifika Prediabetes Youth Empowerment Programme (PPYEP)

> **Phase I**: (i) enhance the pilot study's youth empowerment programme to include relevant information on prediabetes and an original model of co-design (ii) deliver the programme within two Pasifika communities and (iii) evaluate the impact of the programme; and
>
> **Phase II**: (i) implement the co-designed interventions within the community and (ii) assess the impact of each community intervention.

This research pertained to Phase I, and focused on the model of co-design embedded within the youth empowerment framework tested in the YEP. Co-design is an innovative,

interdisciplinary approach to develop, test, and implement innovative systems, programmes, tools, or products (21) (22) (23) (24) (25). Co-design takes a bottom-up approach to develop initiatives with stakeholders that would have been traditionally underrepresented, collaboratively. It is apt within Pasifika communities because co-design approaches often develop social change initiatives to address important issues, relevant to peoples lived experiences (22) (26) (27). There is still much unknown, however, about youth's role in co-design and how they can be utilised in a health context. Further, co-design and youth empowerment frameworks have not been tested jointly, despite theoretical alignment and the common goal of both, to activate meaningful social change.

The second focus of this research was approaching prediabetes prevention within a broader narrative of health promotion as a form of social change. This research postulates that in order to effectively reduce NCDs, health interventions require an in-depth understanding of the socio-environmental-cultural factors that influence one's behaviours. This research investigated how the tested youth empowerment and co-design programme transforms Pasifika youth into agents of social change to contributes towards improving healthy lifestyles in their wider communities. It then investigates how to evaluate to wider impacts of the tested programme using an original framework of social change.

Positionality and my place within the larger research project

An important aspect of this doctoral journey was to understand my positionality as a Canadian, *"palangi"* working on a Pasifika health research team. My research ontology, epistemology, and paradigm are described in chapter three, however, before presenting this

thesis I wanted to ensure transparency in my work and delineate my role within the broader project.

I found my place on this team based on a relationship I built with Riz, the primary investigator on the PPYEP, during our work together on the pilot study. Riz contacted me in 2015 to help design the YEP modules and deliver facilitation training to the team in Wellington. As the project gained momentum, this PhD opportunity arose, and I was delighted to start my doctoral journey. This research aligned with my values of community and empowerment, and I appreciated the practicality of the work. As I moved here, met the community partners, and explored the literature on decolonising research and Pasifika worldviews, I realised that I had much to learn about voice and my place within this team and consistently looked for opportunities to learn, unlearn, and relearn. Part of this was recognising that the dominant voice in shaping the structures of society are colonial and Western and that researchers contribute to formal and informal discourses that have perpetuated health inequities experienced by Pasifika peoples. I wanted this research to be one of mutual learning, embodied relationships, and self-determination to give voice to the youth and communities and shape the body of evidence that in turn influences policy, programmes, and the narratives of society. I appreciated that I will never represent nor fully understand Pasifika worldviews, but I aimed to translate the experience of youth and the communities and capture the transformation resulting from our programme. Positionality as a limitation of the research is visited within the discussion of this thesis as well as ways that my methods ensured that the voice I included represented and respected our Pasifika community partners and their youth.

Chapter 2: Background

This chapter provides an overview of prediabetes and the current status of Pasifika health. It explores how approaching healthy lifestyles from a social change perspective demonstrates promise in a Pasifika health context and aligns with the broader narrative of public health. Last, it presents three comprehensive, systematic literature reviews conducted to gather insight on the existing knowledge on youth empowerment programmes, co-design approaches, and programme evaluation strategies.

Part I: Research context

This research context was underpinned by the notion that the prevention of NCDs for Pasifika peoples should be approached as a form of social change. Ostensibly, prediabetes was a single NCD that exemplified a much broader set of health issues and inequities experienced by Pasifika peoples. This section first describes prediabetes aetiology and the experiences of Pasifika peoples. It then describes how effective prediabetes prevention strategies fit into the broader narrative of Pasifika health promotion.

Prediabetes and the burden of disease for Pasifika peoples

Prediabetes occurs when insulin, the critical blood glucose-regulating hormone, does not effectively stabilise blood glucose levels (28). Prediabetes is caused by either an insufficient concentration of insulin in the blood or a resistance to insulin's effect. As a result, blood glucose levels remain higher than usual, putting the body in a state of hyperglycaemia (28). This prediabetic state can be measured by the HbA1c blood marker, which provides an average level of plasma glucose in the bloodstream over the previous 8-12 weeks. An HbA1c marker less than or equal to 40 mmol/mol is considered normal, HbA1c in the range of 41 to 49 mmol/mol denotes prediabetes (29), and test results over 50 mmol/mol constitute a formal diagnosis of type 2 diabetes mellitus (T2DM).

T2DM is a long term NCD and metabolic disorder (28) (29) (30). T2DM has several comorbid conditions including cardiovascular diseases, such as high LDL cholesterol, hypertension, angina, arrhythmia, peripheral artery disease, kidney disease, stroke, and amputations (31) (30) (32) (33). People with prediabetes have a 41.3% probability of developing T2DM within 7.5 years, and T2DM is more common in people with obesity (having a body mass index [BMI] >30kg/m^2) (14.2%) compared to normal-weight groups (having a body mass index [BMI] <24.9kg/m^2) (2.4%) (34). People often describe obesity, prediabetes, and T2DM as progressive: obesity increases the risk for prediabetes, and prediabetes is the precursor to T2DM (35). In New Zealand and throughout the world, the prevalence of prediabetes and T2DM are expected to rise, matching the current and projected growth in obesity (36).

These NCDs, however, are experienced unequally amongst ethnic groups. According to the latest annual update of the New Zealand Health Survey (2018-2019), the prevalence of obesity, prediabetes, T2DM, and other health indicators varies by ethnic group (37). There were stark health disparities experienced by Pasifika peoples: Pasifika adults were 66.5% more likely to be obese compared to non-Pasifika peoples (37); Pasifika adults and youth experience prediabetes at two times the rate of New Zealand Europeans (NZE) (29% versus 16% for adults and 13.6% versus 7% for youth) (38); and, Pasifika adults are 3.5 times more likely to have T2DM than non-Pasifika peoples (14.6% compared to 6.4%) (37), with the age of onset occurring ten years earlier, after adjusting for demographic variables such as gender, age, and deprivation (39).

There is a host of other health, economic, and social burdens associated with obesity, prediabetes, and T2DM. The Ministry of Health (MOH) recently estimated that the direct economic costs of T2DM in New Zealand (including publicly provided health care provision, pharmaceuticals, ambulance services, medical treatment, and income support) was $600 million

per year, and increasing (40). There are additional, intangible burdens associated with T2DM, including the emotional toll placed on an individual and their family, psychological stress, and social isolation (41). Considering the projected rise and ill-effects of prediabetes and T2DM, more research is needed to determine how to design and deliver effective health promotion programmes for priority groups, like Pasifika communities.

Understanding prediabetes aetiology and effective prevention programmes

Determining effective prediabetes prevention strategies necessitated an investigation into why prediabetes disproportionately affects Pasifika peoples. At present, research on prediabetes-specific aetiology is in its infancy; however, due to the progressive nature of obesity, prediabetes, and T2DM, obesity and T2DM research largely inform our understanding of prediabetes. This section first introduces two aetiological perspectives of obesity and second, discusses effective lifestyle based T2DM prevention programmes.

Obesity aetiology: an environmental approach

Obesity aetiologies are dichotomised by two different perspectives — one genetic and one environmental. The genetic approach stems from the "thrifty gene hypothesis" that first attributed obesity to one's genetic variation that has adapted throughout periods of feast and famine to influence metabolism, energy storage, and insulin processing (42, 43). Under this notion, genetics and an individual's hereditary factors determine their predisposition to obesity (44) (45). Genetic approaches alone, however, are limited and cannot explain current trends in obesity prevalence worldwide. Over the last few decades, global levels of prediabetes and

T2DM have rapidly increased, outpacing the change in genetic variability (46). Additionally, obesity affects the most marginalised populations, regardless of ethnicity (and therefore, genetic consistency) (28) (47). Genetic approaches also result in minimal treatment or clinical applications, and since one's genetics are unalterable, they are redundant as a sole focus for public health intervention research (48) (49).

Informed by these gaps, Egger and Swinburn (1997) were the first academics to develop an environmental definition of obesity (44). Their perspective acknowledges that while biological (or genetic) factors influence obesity; however, behavioural and environmental factors are also important. Behavioural influences include one's actions concerning health, with a large emphasis on diet and physical activity. Environmental effects are considered as all that is external to the individual (50) and include the physical, economic, and socio-cultural environments at the macro (i.e. population) and a micro (i.e. individual) levels (44). Egger and Swinburn coined the term, *"obesogenic environment,"* (p. 564) (51) to describe the physical, economic, and socio-cultural circumstances that encourage individuals to make unhealthy choices and, therefore, become overweight or obese. They defined obesity as *"a normal response to an abnormal environment"* (p. 477) (51), suggesting that an individual is prone to obesity by responding to their immediate environments.

The environmental aetiological perspective relates to the widely used *"Social Determinants of Health"* (SDOH) model (52) that describes the broad combination of social, economic, and political factors that influence individual, community, and population health. The SDOH perspective provides an additional view on health status and the underlying causes of health disparities, beyond biological factors. As defined by the WHO, one's SDOH encompasses the conditions or circumstances in which they are born, grow, live, work, and age, factors that also

underpin the social gradient of societies (52). The SDOH model states there is consequent unfairness in the circumstances of people's lives that hinder or advance people's chances of leading a flourishing, healthy life.

Ultimately, both the obesogenic environment perspective and the SDOH model underpins the approach employed within the PPYEP. This research emphasises that behavioural and environmental influences, and wherein, the socio-cultural and economic realities, are the most relevant for understanding obesity prevalence, global increase, and disproportionate burden of disease. The following section describes how an environmental approach has informed other effective diabetes intervention approaches to substantiate a base for the social change-based empowerment approach tested in this research.

Diabetes prevention research

Current T2DM prevention research demonstrates that lifestyle modifications that extend beyond biological factors lead to T2DM reduction, prevention, and stabilisation (12) (53). Two seminal randomised control studies in the USA and Finland championed this approach and demonstrated that lifestyle modifications could reduce diabetes (5) (6) (7): the "*Diabetes Prevention Programme"* (DPP) and the "*Diabetes Prevention Study"* (DPS).

The DPP compared an intensive lifestyle intervention with a metformin placebo treatment in a cohort of participants with a high risk of developing T2DM (7). It set goals for intervention participants (n= 1,079 participants, mean 50.6 years, BMI 33.9 kg/m) to reduce their overall body weight by 5-7% from baseline measurements through individualised calorie reduction and exercise goals. Participants also received individualised lifestyle programmes and coaching through a 16-session curriculum on behavioural self-management strategies, motivational

campaigns, and clinical support. The research demonstrated that lifestyle intervention resulted in an overall 58% reduction in the incidence rate of T2DM (7) and that for every kilogram of weight loss, there was a 16% reduction in risk in diabetes incidence (adjusted for changes in diet and activity) (7). After a 15-year follow-up, the lifestyle intervention group reduced the incidence of diabetes by 27% compared to the placebo. In comparison, the metformin group only reduced the incidence by 18%, compared to the placebo group. The DPP also illustrated that individualised intervention programmes must account for the social and environmental barriers and enablers in each participant's specific context (7).

The DPS randomised a sample of 522 middle-aged, overweight subjects with impaired glucose tolerance to either an intensive lifestyle intervention group or a control group. The control group received general dietary and exercise advice at the beginning of the programme, and the intervention subjects received additional individualised nutrition counselling and exercise training sessions. The lifestyle counselling sessions provided an opportunity for participants to ask questions, seek support, and engage in conversations of how to make personal changes to suit their lives. This intensive intervention lasted one year, followed by a maintenance period. After one and three years, the intervention group exhibited long-term beneficial changes in diet and physical activity. In a 13 year follow-up, the former intervention group participants sustained lower absolute levels of body weight, fasting and 2-hour plasma glucose results, as well as a healthier diet (6) (9). The DPS suggested that adhering to lifestyle changes for people at high risk of T2DM results in long-term prevention of progression to T2DM (6) (9). It also suggested that individualised plans humanised participants, acknowledging the simple (but important) notion that individuals eat food, not macronutrients and lead complex lives. The

authors concluded that permanent healthy lifestyle changes involve a process of incremental steps towards specific goals, involving multiple disciplines and approaches (9).

Clinical trials with similar robustness were conducted in China, India, and Japan, yielding consistent results (10) (11) (12). Each study showed the effectiveness of lifestyle interventions to reduce the incidence of T2DM in people with impaired glucose tolerance across sex, age, race or ethnicity, and over different body weights. Essential to these programmes were individualised intervention plans to account for the social and environmental barriers or enablers in each participant's specific context and that for individuals to sustain healthy lifestyle behaviours, they must be positioned to take ownership of their intervention plans.

Pasifika culture and health

It was important to define and understand Pasifika culture and their conceptualisation of health before developing and employing specific methods in this research. However, this was an ongoing place of learning and conversation within the broader PPYEP, the background review of this research considered Pasifika culture, the Fonofale model of health, and current public health approaches for Pasifika peoples.

Pasifika culture

Socio-cultural factors influence the basic structure and function of communities, particularly within ethnic communities, such as Pasifika, that hold unique beliefs, sense of identity, philosophies, practices, and values (54). Culture is defined by the Ministry of Social Development in New Zealand as *"expressions of knowledge, beliefs, customs, morals, arts, and personality"* (p. 7) (55). It includes the social settings in which people live and act and the sense of cohesion and interpersonal trust among community members (56) (57). It also incorporates an individual's sense of belonging and support from their community (56) (57). For Pasifika peoples, it is imperative to acknowledge that āiga, kāiga, magafaoa, kōpū tangata, vuvale, fāmili (family) is the centre of Pasifika culture, community structure and function (58) (59). Family provides identity, status, honour, prescribed roles, care, and support for Pasifika peoples (59). It is also important to acknowledge that Pasifika peoples have unique community settings and cultural provisions between Pasifika Island nations. Nga Vaka o Kāiga Tapu recognises that while Pasifika cultures share some similarities in principles and concepts, they each have specific and independent world views (55). Public health experts often overlook socio-cultural

factors; however, they are crucial for a Pasifika person's ability to navigate their environmental contexts and "choose" better, more healthful lifestyle behaviours.

Fonofale model of Pasifika health

A large component of acknowledging Pasifika culture, values, and worldviews in this research involved the inclusion of The Fonofale model of health in the methodology and tested programme. The Fonofale is a Pasifika model of health created by Karl Pulotu-Endemann (1995) as a foundational holistic model of Pasifika health used in the New Zealand context (Figure 2) (60). The model is based on the "fale," a house, and incorporates values and beliefs from Samoa, Cook Islands, Tonga, Niue, Tokelau, and Fiji. The Fonofale model incorporates a broader understanding of health than its' Westernised counterparts and focuses on the wellbeing of individuals and the wider collective (61). Family and culture are the foundation and roof of the fale, which also comprises of four "pou" or pillars of health: mental, spiritual, physical, and other (context, the environment, family, etc.) that each support the health of communities.

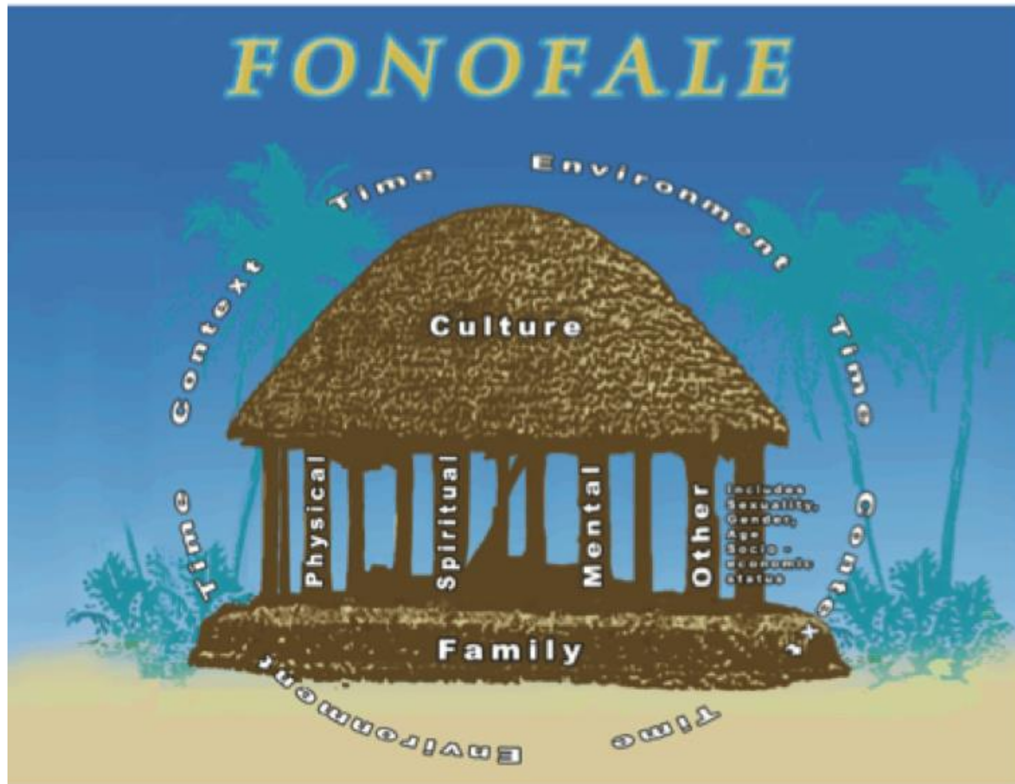


Figure 2: The Fonofale model of Pasifika health.

Pasifika place in society

Pasifika peoples situate within a unique place within New Zealand society, experiencing distinct protective and risk factors for health (62). For Pasifika peoples, poor health outcomes relate to housing quality, education, and economic resources that support good health (63). Pasifika families more often have lower socioeconomic status (39) (58), face increased exposure to health risks, and have less access to quality housing and health care services (64). More than half of Pasifika peoples (55.6%) live in the most deprived areas of New Zealand (NZDep index of 9 and 10) (65), higher than Māori (40.3%), Asian (17.3%), and European ethnicities (11.2%) (65). Deprivation is a profound SDOH. Adults and children living in the most socioeconomically

deprived neighbourhoods are significantly more likely to be obese than those living in the least deprived areas, after adjusting for age, gender, and ethnic differences (64). Public health academics Matheson et al. (2015) (62) researched the impact of deprivation on the prevalence of obesity for Māori and Pasifika youth. They reported that family and material deprivation, racism, and lower awareness about nutrition are SDOH unique to Pasifika (62). They noted that Pasifika communities also have limited opportunity for political participation and less control over external influencers, such as the regulation and enforcement of what and where unhealthy foods are advertised or sold, which reinforces environmental determinants of poor health and perpetuates SDOH inequalities (62).

Concurrently, Pasifika culture contains protective factors for health. The two most formative are social cohesion and social connectedness (39). Social cohesion refers to the community relationships, levels of individual participation in communal activities and public affairs, and the number of community groups within a group or society (56). Social connectedness refers to the relationships people have with others and the networks and social roles one fulfils (57). Evidence shows beneficial links between social cohesion and social connectedness and resilience (66) and improved health outcomes (57). Moreover, health interventions that create and reinforce social connections across Pasifika communities have provided strong foundations for effective public health action (66).

Public health promotion approaches for Pasifika

In New Zealand, several high-level reports, strategies, and frameworks envision more equitable health outcomes for Pasifika peoples (67) (36) (58). Most derive from *"The Ottawa Charter for Health Promotion"* (1986), the first international conference to formulate a holistic approach to

individual and community health (68). The Ottawa Charter considers public health as a process of health promotion that enables people to exercise control over, and thereby achieve, a state of complete physical, mental, and social well-being (68).

Themes of the Ottawa Charter have weaved into many national public health frameworks in New Zealand, including the recent public health strategy, *"Future Direction"* (2016), and the Pasifika-specific approach, *"' Ala Mo'ui: Pathways to Pasifika Health and Wellbeing 2014–2018."* (2018). Future Direction outlines goals for the next ten years of public health promotion in New Zealand and identifies key themes specific to health intervention programmes (36). It calls for interdisciplinary approaches to improve people's health and wellbeing, with a focus on harnessing communities and diverse sectors of district health boards, non-governmental organisations, and community service providers (36). It also emphasises promoting wellness, investing in early life, and providing room for individuals to understand the health system and make choices about the care and support they receive. Essentially, it states that the main objective for public health in New Zealand is to achieve health equity amongst all peoples (36).

The *"' Ala Mo'ui: Pathways to Pasifika Health and Wellbeing 2014–2018"* (58) report outlined the national approach for Pasifika health at the beginning of our research. It proclaimed that health systems must strive for Pasifika peoples to experience equitable health outcomes and lead independent lives. It outlined four principles, to:

(i) improve health systems and services to meet the diverse needs of Pasifika peoples;

(ii) deliver services locally in the community;

(iii) better support Pasifika peoples to be healthy; and

(iv) improve the broader determinants of health for Pasifika peoples (58).

The report also stated Pasifika peoples must be actively engaged in identifying and developing new approaches specific to their communities (58). The report illustrates that a key focus for intervention work is to strengthen Pasifika health service providers and to fund programmes that support Pasifika youth to reduce the prevalence of health risk factors (p. 11) (58). It explicates that individual Pasifika non-governmental organisations and strengths-based research should seek to prevent causes of disease and are essential in health system transformation (58).

Both national strategies are critical first steps to achieve more equitable health outcomes for Pasifika peoples; however, they do not specify pragmatic interventions to realise their visions. At present, there is an impetus to determine how to operationalise these high-level goals and objectives and to determine what successful healthy lifestyle intervention programmes look like for Pasifika communities.

Part II: A social change approach to healthy lifestyles

This section defines social change and presents health in a social change context. It then provides background on the youth empowerment and co-design components that comprise the tested programme designed to inspire Pasifika youth to become catalysts of social change in their communities.

Defining social change

Social change is the progression of cultural norms, social organisations, and individual behaviours and value systems (69). Historically, social change was concerned with the alterations in social structure, rules of behaviour, and value systems that connected to a society's wealth and resources (70). Now, social change encompasses the evolution in a societies' broader political ideologies, socioeconomic, cultural, and political differences (71) and micro-level aspects of human psychology and demographics and how they progress society in a particular direction (69) (72). Ultimately, social change is used to describe the transformation of the system (73) with two overarching patterns, or mechanisms: one-directional change and cyclic change (72) (69). One-directional change conceptualises the development of society as a linear process with continuous evolutionary decline or growth (74) (75); it assumes that change is inevitable and that society develops as it diversifies and adapts/ maladapts over time. Alternatively, cyclic

change conceptualises social change as a relentless series of ups and downs over cycles of time, seasons, and feedback loops that lead to a rise or a decline, depending on adaptation to change at that time (76). Most other theories of social change (e.g. the Marxist theory of classism, Weber's theory of social development, or technological innovation theories) derive from either one-directional or cyclical principles' (69). Although the purpose of this background was not to highlight nuanced differences between the theoretical definitions, the critical aspect for this research is that all iterations of social change share the commonality that they concern transformation (69).

Approaching healthy lifestyles as a form of social change

This thesis argues that health promotion must encompass a more holistic approach that integrates within the broader social context and engages a wide variety of stakeholders. A social change approach to healthy lifestyles considers public health as more than the prevention of disease. It encompasses the patterns and cultural development of everyday life and considers the progression of behaviours and value systems, cultural norms, and social organisations involved in health promotion (77) (78) (79). More academics and government agencies are approaching health promotion as a form of social change because current public health challenges differ from those of the previous centuries. Previously, public health issues were solved with technological advancements that now seem basic, such as immunisation (e.g. polio (80)) or basic infrastructure and sanitisation (e.g. cholera (81)). Now, public health challenges involve more intricate complexity; individual and population health links to the social, economic, and environmental landscapes of a particular place that are subject to fluctuations due to politics, governance, and shifting health care systems (82) (83). Effective health promotion requires a new way of looking

at inspiring pro-healthy lifestyle behaviour change, and there is a growing body of evidence suggesting that healthy lifestyles are sustainable only when many individual members of the population navigate their social, environmental, and structural contexts (84).

Within intervention research, social change outcomes aim to change behaviours on a societal level, eliminate harmful social and cultural practices, and improve structural inequalities (85). These include a shift in an individuals' understandings of social good and their empowerment to reorient their behaviours, coupled with the structural frameworks that shape them. Interventions must reflect the complex interactions between lifestyle factors and socio-cultural determinants and empower families and communities to make healthier lifestyle decisions (62) (86) (87). From this perspective, the success of an intervention comes not from where it targets, but rather how it works to create change within the system (85) (84).

A social change approach to health promotion has seen success at reducing several prominent NCDs globally. Tobacco prevention and smoking cessation involved shifting the narrative of smoking in the media and mass culture as well as creating new economic drivers and government regulation that together, reduced smoking (88). HIV/AIDS (human immunodeficiency viruses/ acquired immunodeficiency syndrome) prevention also approached health as a form of social change (89). In developing countries, successful health promotion techniques accounted for the social and cultural stigma of sex and tailored efforts to the specific social contexts and barriers to access sexual health information (89). Childhood obesity prevention efforts have also implemented strategies across many levels and environments, and successful interventions often build a culture of health at the community level that supports individual pro-health behaviours (90).

One of the understudied concepts the role of youth in health social change movements, as evidenced in the following sections.

Youth as agents of social change

This section provides background information on youth empowerment programmes and co-design approaches in a social change context and explicates the definitions employed in this research. It includes two systematic literature reviews that identify gaps in the current body of literature within a Pasifika health and social change context. These reviews informed the programme development and delivery. However, since the co-design model was developed to fulfil the research objectives, this thesis places more emphasis on the co-design review. To provide the overarching programme framework, however, the empowerment component is presented first.

Empowerment component

This section begins with an overarching theoretical definition of empowerment. It presents results from a systematic literature review of youth empowerment programmes relevant to Pasifika health, youth, and social change.

Defining empowerment - theories abound

Brazilian scholar Freire theorised empowerment in 1968 using the concept of *"conscientization,"* a process whereby someone oppressed becomes aware of their situation and is equipped to change it (91). This definition is rooted in personal and societal transformation and gained momentum in the 1970s. It was foundational in the feminist movement and other

political activism on race and social justice (92) (93). Later, in 1981, psychologist Rappaport further explored empowerment and proclaimed that psychological barriers limit everyone; however, that are, in fact, diminishable (94). Rappaport stated that individuals have a responsibility to overcome these barriers and leave a positive impact on society (94).

Since then, definitions of empowerment abound to incorporate concepts of psychology, philosophy, and political science (95) (96) (97). They describe a range of diverse activities (98), from individual empowerment (99) as well as broader social and political action (100), and they explain both empowerment processes and outcomes (101).

Despite the enigmatic nature of empowerment, there are a few fundamental and enduring principles. Martínez et al. (2016) conducted a systematic analysis of the conceptualisation of empowerment over the last 15 years. They found 297 bibliographical references that fit inclusion criteria (from an exhaustive total of 3262), most of which linked empowerment to three common concepts: power, education, and participation (102). Power refers to agency and the ability for people to act on their surroundings and progress through a gradual acquisition of resources (103). Participation refers to individuals, groups, or communities, playing an active role in decision-making and overall engagement (104). Education encompasses the process of learning, acquiring knowledge, skills and capabilities and is used in empowerment processes to increase awareness of societal issues and inform ideas to create change. Notably, education was the most consistent theme of empowerment research (96).

Empowerment as a process of social change

Empowerment has been considered a mechanism to create social change since Freire's original theorisation of empowerment and individual and societal transformation (91) as well as

Rappaport's notion that empowered individuals can overcome personal barriers and leave a positive impact on society (94). Social change-oriented empowerment strategies also have a long history of enabling marginalised peoples to create and redefine social norms (105), improve inequalities (106), and inspire greater socio-political involvement (107) (104).

Empowerment, as a form of social change, also concerns different *"levels"* of society. Empowerment scholar, Zimmerman, identified that empowerment has three tiers of influence that comprise social change: psychological, organisational, and community- level (95) (108) (96). Empowerment at the individual level includes beliefs about one's competence, efforts to exert control, and understanding of the socio-political environment, and self-esteem (95) (99) (105) (91). Organisational empowerment occurs when organisations have shared responsibilities, a supportive atmosphere, and challenge traditional hierarchical structures and decision-making processes (95) (96) (109) (110) (111). Community-level empowerment occurs when communities have the capacity and desire to initiate efforts to improve their realities, respond to threats to their quality of life, and provide opportunities for citizenship (95) (108) (96). Community-level empowerment acknowledges that communities both are comprised of, and influence, the individuals and organisations within it, and shape one's access to social, political, and economic resources (95) (108) (96).

Empowerment in a health context

Empowerment approaches gained momentum in health promotion internationally since the Ottawa Charter in 1986, where the vision for global health focused on the process of enabling individuals and communities to increase their control over their overall wellbeing (68). Empowerment-based interventions take a health-enhancing approach and acknowledge that

health issues situate within a broader context of social and environmental determinants. (112). They apply the foundational empowerment concept that when people are aware of their situation and become equipped to change it, they can inspire change. As such, empowerment solutions in health often target health inequalities while promoting social justice to positively affect the social, environmental, and cultural determinants of health (113). They compel us to think of health in terms of wellbeing versus the absence of illness, capabilities versus deficits, and to approach health promotion collaboratively versus authoritatively (114).

An essential component of empowerment approaches within the health sector is the reconsideration and redistribution of power. Individuals and communities in empowering situations reclaim power and are encouraged to participate in the process of identifying barriers to wellbeing and ideating strategies to address them. Public health programmes, initiatives, and interventions that are determined by individuals within communities address relevant, community-specific needs (115) (116) (117) (118) (119). Often, the participating individuals deepen their health knowledge and achieve a sense of ownership in the direction of health for their communities (120) (105). Participation can also increase an individual's sense of self-efficacy and motivation to take up long-term, holistic, healthy lifestyle behaviours (121).

Empowerment in a youth context

Empowerment approaches for youth have been widely promoted as an effective way to develop habits and competencies that can improve young people's wellbeing and resilience (122). Youth empowerment approaches comprise a robust conceptual foundation for a multitude of organisations including the African and European Unions, the United Nations, the World Bank, numerous national governments, non-profit organisations, and charities (1) (123) (124). Despite

differences within these institutions, all youth empowerment programmes endorse the participation of young people in policy and programming, community decision making, and in becoming agents of change within their wider communities (1) (123) (124). Martínez et al. (2016) identified that the transformative dimension of empowerment outcomes for youth is the connection between critical reflection and meaningful action:

> *"Empowerment is the process by which adolescents develop the consciousness and skills necessary to envision social change and understand their role in that change"* (125) p. 284 (102).

They further specified that these actions are directed at the root causes of relevant community issues and, therefore, positively affect systems, institutions, and cultural values, norms, and practices (125).

Empowerment as a catalyst of social change with youth aligns to the *"Social Change Model of Leadership"* (SCML) that informed the development of the pilot YEP. In 1994, the Higher Education Research Institute of the University of California, Los Angeles (UCLA) developed the SCML to enhance student learning and facilitate positive social change (79). The SCML is founded on the notion that leadership is a values-driven process that results in positive social change (79). The SCML describes leadership as a process rather than a position and claims that all youth can develop as leaders and, therefore, have the potential to contribute to meaningful to social change (79). The SCML outlined seven values of leadership development essential to drive social change that occur at the individual, group, and community levels: consciousness of self, congruence, commitment, common purpose, controversy with civility, collaborations, and

citizenship (79) (126). This model emphasises the need to understand self and others and the values of each of these levels in society to create community change (79) (126).

In this research context, youth have enormous potential for empowerment processes within health promotion for several important reasons. First, youth have an innate enthusiasm and aptitude for change (113), and consistently demonstrate enthusiasm to participate in social and community action projects (13). They are critical of their social realities and bring a unique perspective to envisioning change (14). They are situated in a unique place in society, being connected to their existing family and community structures, while still formulating their own lifelong habits. Youth, therefore, denotes an age of opportunity to decrease health risk factors and set a foundation of lifelong health (13).

The following section presents the first literature review on youth empowerment programmes in a Pasifika, health, and social change context.

Existing research of youth empowerment programmes in a Pasifika, health, and social change context

The literature review contains three different searches relevant to youth empowerment and the following topics: (i) within a Pasifika health context; (ii) within an Indigenous context; and (iii) within a health or social change context (Figure 3).

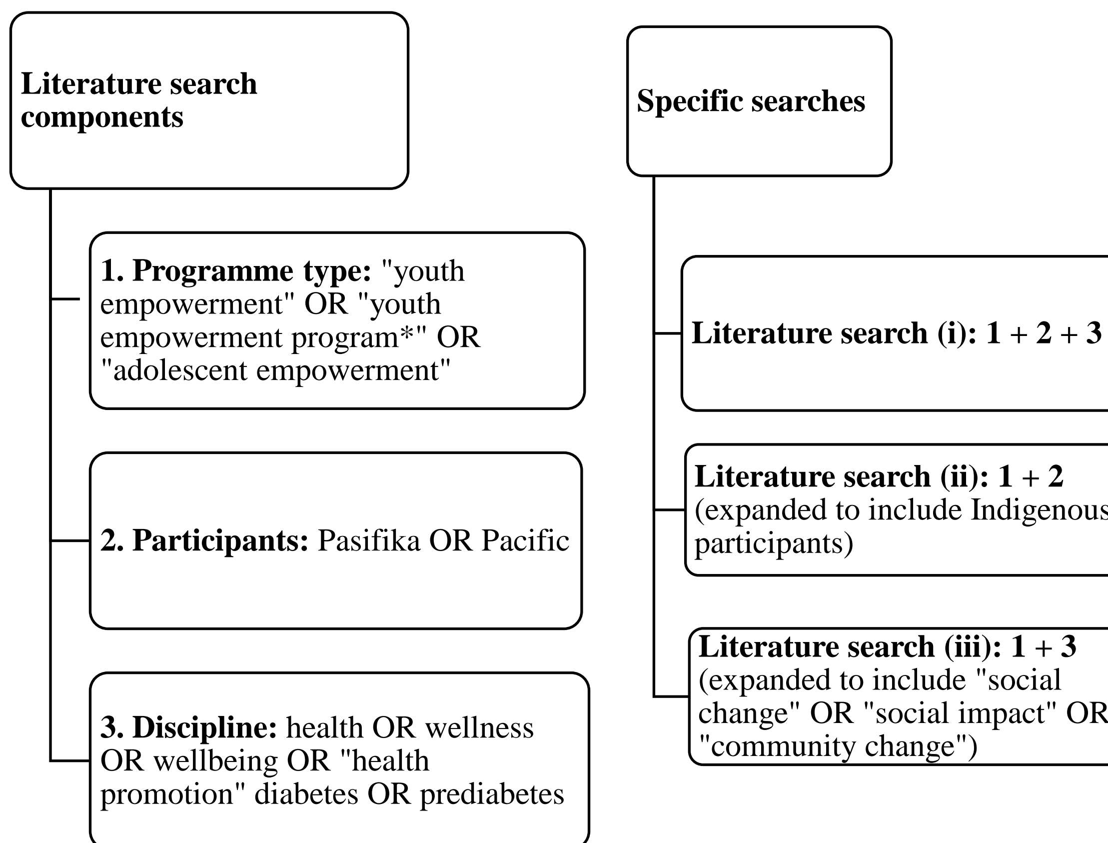


Figure 3: Systematic literature review protocol for youth empowerment programmes within a Pasifika health context

Each search was conducted first through Massey Discover and replicated on Scopus. Variations of each of the above terms were included ("youth empowerment" OR "youth empowerment program*" OR "adolescent”). The search items were filtered for results published within the last

20 years and of peer-reviewed journals only. Exact duplicates were omitted. This review included qualitative, quantitative, and mixed methods study designs and the reference lists of included studies were also scanned for relevance. Results were exported to Endnote, and the titles and abstracts were screened against the three inclusion criteria. The research:

(i) involved a youth empowerment programme as opposed to a theoretical review;

(ii) aimed at youth that were Pasifika, Indigenous, or part of an ethnic minority in a developed country, or from any Pacific Island nation; and,

(iii) related to health promotion, healthy lifestyles, or social change.

For literature search (i), there were two results on Discover and one on Scopus. For literature search (ii) there were 15 results through Discover and four on Scopus. For literature search (iii) there were 60 results through Discover and 40 through Scopus for the refined search (iii). Table 1 presents the references that fit the inclusion criteria.

Table 1: Youth empowerment literature search results

Literature search (i)		
Theme	**Search terms**	**Results that fit the search criteria (1/2)**
Literature relevant to youth empowerment within Pasifika health	TI Title: "youth empowerment" OR "youth empowerment program*" OR "adolescent empowerment" + Pasifika OR Pacific + health OR wellness OR wellbeing OR "health promotion" diabetes OR prediabetes	**I.** Tupai-Firestone R, Matheson A, Prapavessis D, Hamara M, Kaholokula K, and Tuisano H, et al. Pasifika Youth Empowerment Programme: a potential public health approach in tackling obesity-health related issues. Altern An Int J Indig Peoples. 2017 Dec 15;14(1):63–72.(14)
Literature search (ii)		
Theme	**Search terms**	**Results that fit the search criteria (2/15) where * is a repeat reference**

Literature relevant to youth empowerment within an Indigenous context	TI title: "youth empowerment" OR "youth empowerment program*" + Pasifika OR Pacific OR Indigenous	**I.** Kope J, Arellano A. Resurgence and critical youth empowerment in Whitefish River First Nation. Leisure/ Loisir. 2016;40(4):395-421.(127) **II.** Tupai-Firestone R, Matheson A, Prapavessis D, Hamara M, Kaholokula K, and Tuisano H, et al. Pasifika Youth Empowerment Programme: a potential public health approach in tackling obesity-health related issues. Altern An Int J Indig Peoples. 2017 Dec 15;14(1):63–72.(14) *

Literature search (iii)

Theme	**Search terms**	**Results that fit the search criteria (6/60) where * is a repeat reference**
Literature relevant to youth empowerment within social change context	TI title: "youth empowerment" OR "youth empowerment program*" + health OR wellness OR wellbeing OR diabetes OR prediabetes OR "social change" OR "social impact" OR "community change"	**I.** Ferrera MJ, Sacks TK, Perez M, Nixon JP, Asis D, Coleman WL. Empowering immigrant youth in Chicago: Utilizing CBPR to document the impact of a Youth Health Service Corps program. Family and Community Health. 2015;38(1):12-21.(16) **II.** Heinert S, Del Rios M, Arya A, Amirsoltani R, Quasim N, Gehm L, et al. The CHAMPIONS NETWork: Training Chicago High School Students as Health Advocates to Improve Health Equity. Health Promotion Practice. 2019;20(1):57-66. (17) **III.** Lewis RK, Lee FA, Brown KK, LoCurto J, Stowell D, Maryman J, et al. Youth empowerment implementation project evaluation results: A program designed to improve the health and well-being of low-income African-American adolescents. Journal of Prevention and Intervention in the Community. 2018;46(1):28-42.(18) **IV**. Tupai-Firestone R, Matheson A, Prapavessis D, Hamara M, Kaholokula K, and Tuisano H, et al. Pasifika Youth Empowerment Programme: a potential public health approach in tackling obesity-health related issues. Altern An Int J Indig Peoples. 2017 Dec 15;14(1):63–72. (14) * **V.** Zimmerman MA, Eisman AB, Reischl TM, Morrel-Samuels S, Stoddard S, Miller AL, et al. Youth Empowerment Solutions: Evaluation of an Afterschool Program to Engage Middle School Students in Community Change. Health Education and Behaviour. 2018;45(1):20-31.(19) **VI.** Berg M, Coman E, Schensul JJ. Youth action research for prevention: A multi-level intervention designed to increase efficacy and empowerment among urban youth. American journal of community psychology. 2009;43(3-4):345-59.(128)

Critical review

The following section presents a critical review of the literature that fit the inclusion criteria for this research. It includes the study aims, notable characteristics, and critical findings, and gaps that implicate this research.

Youth empowerment in a Pasifika context

This review determined that there are scant applications of youth empowerment programmes in Pasifika health promotion (Table 1). Empowerment theory has been used to describe Indigenous and Pasifika experiences and goals of social change; however, few contained specific programmes in which youth received a dosage or intervention. The YEP pilot study was the only reference that fit the parameters of the first literature review. Since it has been discussed earlier in this thesis, refer to Chapter 1.

Youth empowerment in an Indigenous context

There was only one additional programme that fit the inclusion criteria for the literature search (ii), the *"Critical Youth Empowerment Programme"* (CYE) in Whitefish River First Nation (WRFN), Canada. Researchers of the CYE conceptualised empowerment as a form of a resurgence of Indigenous traditional practices and employed a model of youth empowerment to foster social change and community mobilisation (127). Youth met three nights per week and participated in an educational workshop (127). After each session, the community mentor facilitated a discussion to reflect on youth-driven topics. Youth participants engaged in critical reflection on interpersonal and socio-political processes that exacerbate health issues in their communities (127). The CYE demonstrated the importance of youth empowerment programmes in an Indigenous setting to incorporate cultural and local knowledge and encourage socio-

political change (127). It determined that a critical component of their programme was the opportunity for youth to plan and deliver events in their community. The youth-led interventions ranged from intergenerational sports tournaments, traditional games, beading, arts and crafts, cooking, and year-end trips (127). The CYE suggests that youth empowerment programmes should provide space for the translation of individual empowerment into the community and that youth can participate effectively in all stages of the planning, fundraising, managing, and implementing community interventions (127).

Youth empowerment programmes in a health or social change context

Five additional references fit the criteria for youth empowerment programmes designed to improve health and inspire social change outside of a Pasifika or Indigenous context. One focused on health behaviours only, and the other four focused on both health and social change outcomes together.

In terms of behavioural health change, the *"Youth Empowerment Implementation Project"* (YEIP) was a collaborative project to change health behaviours among low-income African-American youth living in the Midwest USA (18). It researched a collaboration between afterschool summer camps, summer enrichment camps, schools, and faith-based organisations that ran for two and a half years. The YEIP content included mental health skill development, discussion-based sessions, recreational activities, and sports (18). The results from baseline to follow-up demonstrated a reduction in junk food intake for participants and an increase in fruit and vegetable intake and no change for physical activity (18). The YEIP showed that having a diverse team of community partners provided an array of services for both youth and their families. It successfully utilised community resources and tailored the programme activities to

meet the youth's interests and needs (18); however, the evaluation of empowerment was limited by the focus on health behaviours only.

The remaining references investigated the influence of youth empowerment programmes beyond health behaviours. First, the University of Illinois at Chicago convened a community-university-hospital partnership to implement the *"CHAMPIONS NETWork"* (17). The CHAMPIONS NETWork programme was a six-week series of school-based educational intervention workshops to develop youth's capacity to respond to health emergencies, increase health knowledge, and equip them with skills to improve their communities (17). The empowerment outcomes were measured by student's grades, self-efficacy, and knowledge of health conditions. The research concluded that the programme empowered youth with knowledge and communication tools to become health advocates for themselves, their families, and their communities, and set the foundation for several participants to pursue careers in health (17). The CHAMPIONS NETWork programme suggests that effective empowerment programmes must include outlets for community engagement and the potential for youth to apply their skills in the health sector.

Similarly, the *"Youth Health Service Corps"* (YHSC) programme in Chicago used empowerment programming to (i) improve health literacy throughout the community; (ii) provide services to youth participants on health career exploration; and (iii) participate in community organizing and advocacy efforts (16). This programme was run in partnership with existing Latino and health service organisations in over 30 states. The programme consisted of a five-module curriculum, each comprised of two, three-hour sessions to build youth capacity and promote healthy behaviours. The health curriculum focused on nutrition and physical activity to address five major diseases: diabetes, hypertension, cancer, HIV/AIDS, and asthma. This

specific research evaluated one of the programmes in a Latino community in Chicago (16). Key outcomes of the programme included meaningful youth participation in the programme, the youth's critical reflection on interpersonal and socio-political processes, and community-level engagement (16). The programme helped shift the way participants thought about themselves as individuals, improved their sense of agency, and facilitated an understanding of how they can have a positive impact on their communities. One of the essential components of the programme was the knowledge translation module, following the *"Madres a Madres"* model, a peer to peer health promotion model developed by the Houston Hispanic community. This model developed the youths' capacity to act as community "insiders" to share their knowledge with members of their community (individuals with low health literacy) in an understandable, culturally relevant way. All 23 youth in the sample, cumulatively provided health education to approximately 800 individuals through one-on-one conversations and speaking in front of groups at health fairs and community-based forums. Researchers concluded that the YHSC programme raised critical consciousness on both the individual and community levels. As youth participated in the programme, they experience a growing understanding of their position and how the constraints of broader social and historical forces shape their circumstances (16). Their research also suggests that existing health service organisations can incorporate youth empowerment programmes into their work and adapt to them to diverse cultural and community settings.

The *"Youth Empowerment Solutions"* (YES!) programme was an afterschool programme for middle school students (n= 367) in the USA that engaged youth in positive community change to promote healthy lifestyles (19). The programme included an active learning curriculum for youth to gain confidence, think critically about their community, and work with adults to create positive community change (19). The researchers assessed *"psychological empowerment"* (PE)

that encompassed (i) prosocial behaviour of leadership efficacy, civic efficacy, self-esteem, community engagement, academic effort, and responsible decision making and (ii) antisocial behaviour of aggression and delinquency (19). The YES! programme was tested across different ecological contexts (e.g. urban, rural, and suburban). The youth demonstrated enhanced intrapersonal empowerment, interactional empowerment (positive relationships with peers and programme mentors), and behavioural actions towards leadership, community engagement, and school achievement (19). The results of this study indicate that empowering processes enhance PE outcomes and since a variety of communities tested the programme, the research suggests that the YES! programme adapts to different age groups, organisations, and cultures (19).

Last, the *"Youth Action Research for Prevention (YARP)"* exemplified how individual, group, and community outcomes of empowerment are interconnected (128). It utilised youth empowerment as the cornerstone of a multi-level intervention in Hartford, Connecticut, for ethnic minority youth to improve health behaviours (reducing drug use) and engage in social action projects (128). The YARP intervention focused on developing educational skills and built group identity and cohesion. It then trained the youth as a group to use research to understand their community better. It engaged them in research for social action at multiple levels in community settings (family, school-based, and policy etc.). The YARP helped the youth question previously assumed beliefs, values, and perspectives about themselves and barriers to achievement. Through this critical analysis, complemented with individual and group educational advancements, the youth translated these competencies into action within their school and community settings. The authors concluded that it is essential for individual youth to develop critical consciousness and agency to inspire collective action. They suggested that by engaging in community activism, youth sustained individual behavioural change.

Conclusions and conceptualising youth empowerment within this research

Based on this literature review, youth empowerment programmes have the potential to influence the cognitive perceptions, values, and behaviours of an individual as well as the function of a group or organisation to affect social change. Although there is scant research in a Pasifika or Indigenous context that offer practical empowerment methods, the review derived four important implications for this research:

(i) education is particularly relevant in health-focused youth empowerment programmes (17) (18);

(ii) youth empowerment programmes that focus on leadership positively affect self-efficacy and self-esteem that increases youth propensity to engage in their communities (16) (19);

(iii) youth offer unique insight into community change (19);

(iv) youth empowerment programmes must incorporate a specific, actionable knowledge translation component (16) (17); and,

(v) involving youth in community change initiatives reinforces and sustains individual empowerment outcomes (128).

Overall, two components comprised the theoretical definition of empowerment employed in this research: (i) the purpose of empowerment is to develop the capacity and capabilities of young leaders that contribute to the process of social change, and (ii) empowerment occurs at the individual, group, and community levels.

Co-design component

This section begins with a short history and overarching definition of co-design and presents findings from the systematic literature review on co-design relevant to this research.

Co-design theory

Co-design is a collaborative, interdisciplinary approach to develop, test, and implement system innovation and social change services, programmes, tools, or products (21) (22) (23) (24). Co-design approaches engage all key stakeholders, that would have traditionally been underrepresented, to identify priorities, create solutions, and determine implementation frameworks (124) (24) (21) (22) (25). Co-design originated in Scandinavia in the 1970s when the *"Norwegian Iron and Metal Workers Union"* (NJMF) involved front-line workers in its first design and use of computer systems (129). It was based on the notion that people who engage with the end-product should be deeply involved in its design.

Methodologically, co-design research approaches have four theoretical underpinnings: Participatory Action Research (that contains Community-Based Participatory Research), Narrative Theory, Learning Theory, and Design-thinking (25). Participatory Action Research methodologies focus on equitable collaboration, with the ultimate goal of effecting positive social change (130). Narrative Theory focuses on the subjective experiences of individuals to emotionally connect people, and holistically evaluate an experience (131). Learning Theory emphasises the importance of reflection and consideration of new perspectives (132). Last, Design-thinking employs a user-centred design process to redesign a system or service effectively (133).

Many co-design approaches, however, are theorisations and do not explicate specific protocol or procedures. Rowe (1991) was the first academic to identify five steps of co-design in his work, *"Design Thinking"* (1991), that offered a replicable, pragmatic approach to co-design (133): (i) **Empathise** – reframing issues in ways that are relevant to those involved; (ii) **Ideation** – envisioning a handful of ways to meet the key issues; (iii) **Iteration** – reflect and share the ideas with others to receive feedback; (iv) **Build** a prototype of the concept, and; (v) **Test** – the prototypes and obtain further feedback with the communities of interests or key stakeholders.

Co-design was traditionally used only in consumer product development; however, it is gaining momentum in the public, non-profit, and health sectors (22). Within the health sector, co-design is most often used to improve patient-centred care services and was piloted within the health sector at the Head and Neck Cancer Service in Luton, UK, in 2006 (134). It has since emerged within a variety of clinical areas from emergency medicine to cancer, mental health services, and diabetes care (27) (135) (136) to eHealth and digital user experience interventions (137), and mental health (138) throughout the UK, Europe, North America, Australia, and New Zealand.

Co-design is also gaining traction as an effective way for youth to share insights, knowledge, and wisdom within intervention development (139) (140) (141) (142) (143) (144) (145) (146) (147) (147) (148) (149). Co-design approaches with youth encourage the design to individualise to youth-specific contexts move beyond traditional health promotion paradigms, where youth voice is often absent (27). Within youth diabetes prevention research, however, co-design is in its infancy within youth diabetes prevention research. There are only two published applications of co-design. The first used focus group discussions to gather youth's experiences with their experiences with diabetes transition services (136). This study used co-design as a theoretical underpinning, however, and did not "design" an intervention nor change strategy. The second

used co-design develop a new group care method for young adults with diabetes, however, only the protocol for the *"TOGETHER"* study has been published (150).

The following section presents the second literature review of this research on co-design within empowerment, Pasifika, health, and social change contexts.

Existing research on co-design and empowerment within a Pasifika, health, and social change context

The literature review contains four different searches on co-design and the following topics: (i) literature within youth empowerment context; (ii) literature within a youth Pasifika or Indigenous context; (iii) literature within a Pasifika or Indigenous context, more broadly; and (iv) literature within a health or social change context (Figure 4).

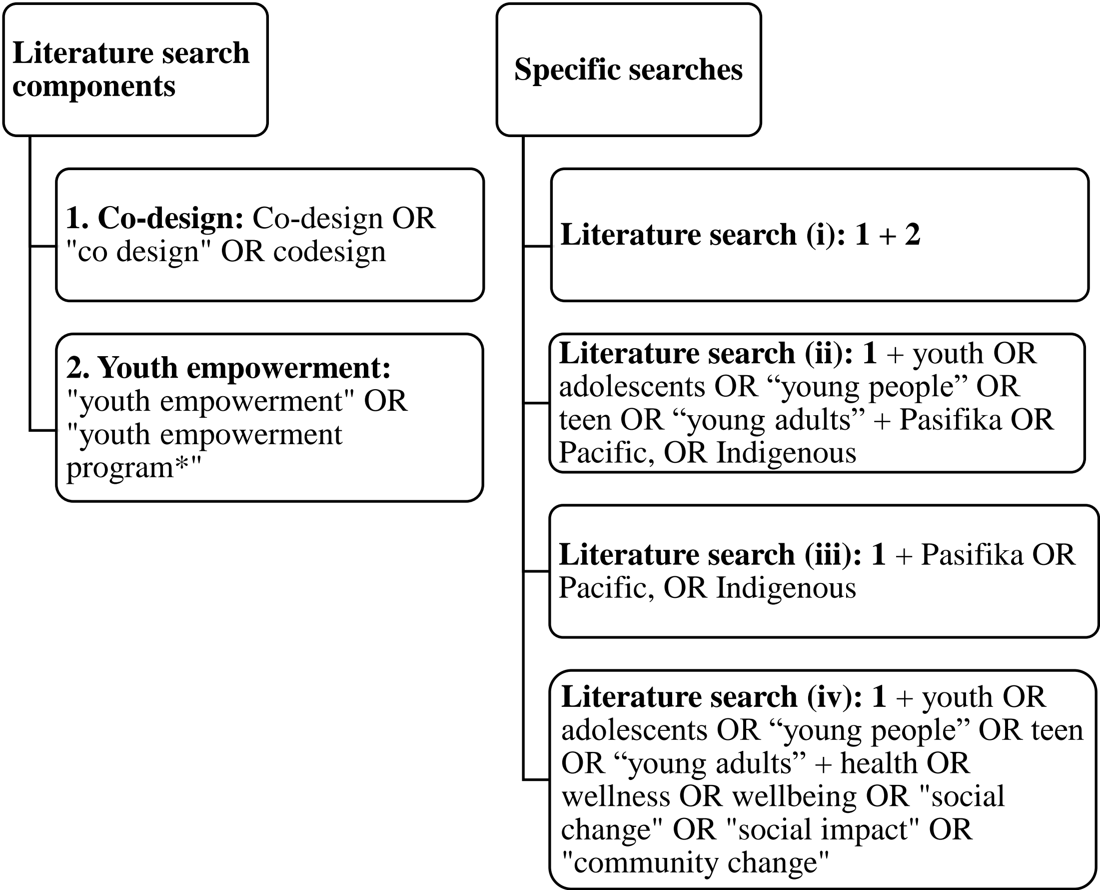


Figure 4: Systematic literature review protocol for co-design within youth empowerment, Pasifika, health, or social change context

Each search was conducted first through Massey Discover and replicated on Scopus. Variations of each of the above terms were included ("co-design" OR "co design" OR "codesign"). The search items were filtered within the last 20 years and showed results for items in the article title only of peer-reviewed journals. Exact duplicates were omitted, and this review included qualitative, quantitative, and mixed methods study designs. Results were exported to Endnote, and the titles and abstracts were also screened against three inclusion criteria. The study:

(i) involves a co-design process as opposed to a theoretical review;

(ii) relates to health promotion, healthy lifestyles, or social change; and,

(iii) aimed at Pasifika or Indigenous youth, or youth part of an ethnic minority in a developed country or from any Pacific Island nation.

Initially, the inclusion criteria also included studies within a youth empowerment context, however, since this yielded no results, this criterion was omitted, and twelve references fit the refined inclusion criteria (144) (151) (152) (153) (154) (142) (143) (145) (146) (147) (148) (149). In literature search (i), there were no results in Discover and three on Scopus, none of which fit the inclusion criteria. For literature search (ii), there was one result on Discover and two on Scopus, two of which match the inclusion criteria. For literature search (iii), there were eight results on Discover and five on Scopus, three of which fit the inclusion criteria. For literature search (iv), there were six results through Discover and four through Scopus for the refined search, eight of which fit the inclusion criteria (Table 2).

Table 2: Co-design literature search results

Literature search (i)		
Theme	**Search terms**	**Results that fit the search criteria (0)**
Literature relevant to co-design within a youth empowerment context	TI Title: Co-design OR co design OR codesign + "youth empowerment"	No results
	Literature search (ii)	
Theme	**Search terms**	**Results that fit search criteria (1/1)**
Literature relevant to co-design within a Pasifika youth or Indigenous youth context	TI title: Co-design OR co design OR codesign + youth OR adolescents OR "young people" OR teen OR "young adults" + Pasifika OR Pacific OR Indigenous	**I.** Martel RM, Darragh ML, Lawrence AJ, Shepherd MJ, Wihongi T, Goodyear-Smith FA. Youthchat as a primary care e-screening tool for mental health issues among Te Tai Tokerau youth: Protocol for a co-design study. JMIR research protocols. 2019;8(1):e12208.(144) **II.** Thabrew H, Fleming T, Hetrick S, Merry S. Co-design of eHealth Interventions With Children and Young People. Frontiers in psychiatry. 2018;9:481-2.(151)
	Literature search (iii)	
Theme	**Search terms**	**Results that fit search criteria (3/8)**
Literature relevant to co-design within a Pasifika or Indigenous context	TI title: Co-design OR co design OR codesign + Pasifika OR Pacific OR Indigenous	**I.** Jesson RN, Spratt R. An intervention in literacy in three Pacific nations: Implications of a context specific approach to co-design. International Education Journal: Comparative Perspectives. 2017;16(1):36-49.(152) **II.** Verbiest MEA, Corrigan C, Dalhousie S, Firestone R, Funaki T, Goodwin D, et al. Using codesign to develop a culturally tailored, behaviour change mHealth intervention for indigenous and other priority communities: A case study in New Zealand. Translational Behavioural Medicine. 2019;9(4):720-36.(153) **III.** Verbiest M, Borrell S, Dalhousie S, Tupa'I-Firestone R, Funaki T, Goodwin D, et al. A co-designed, culturally-tailored mhealth tool to support healthy lifestyles in māori and pasifika communities in New Zealand: Protocol for a cluster randomized controlled trial. JMIR research protocols. 2018;7(8):e10789.(154)
	Literature search (iv)	

Theme	Search terms	Results that fit the search criteria (8/10) where * is a repeat reference
Literature relevant to co-design within a youth health or social change context	TI title: Co-design OR co design OR codesign + health OR wellness OR wellbeing OR "social change" OR "social impact" OR "community change" + youth OR adolescents OR "young people" OR teen OR "young adults"	**I.** Hagen P, Reid T, Evans M, Vea AT, editors. Co-design reconfigured as a tool for youth wellbeing and education: A community collaboration case study. Proceedings of the 15th Participatory Design Conference: Short Papers, Situated Actions, Workshops and Tutorial; 2018.(142) **II**. Hodson E, Dadashi N, Delgado R, Chisholm C, Sgrignoli R, Swaine R. Co-design in mental health; Mellow: a self-help holistic crisis planning mobile application by youth, for youth. Design Journal. 2019;22:1529-42.(143) **III**. Martel RM, Darragh ML, Lawrence AJ, Shepherd MJ, Wihongi T, Goodyear-Smith FA. Youthchat as a primary care e-screening tool for mental health issues among Te Tai Tokerau youth: Protocol for a co-design study. JMIR research protocols. 2019;8(1):e12208.(144) * **IV.** Ospina-Pinillos L, Davenport T, Mendoza Diaz A, Navarro-Mancilla A, Scott EM, Hickie IB. Using Participatory Design Methodologies to Co-Design and Culturally Adapt the Spanish Version of the Mental Health eClinic: Qualitative Study. Journal of Medical Internet Research. 2019;21(8):e14127.(145) **V.** Rodriguez A, Beaton L, Freeman R. Strengthening social interactions and constructing new oral health and health knowledge: The Co-design, Implementation and Evaluation of A Pedagogical Workshop Program with and for Homeless Young People. Dentistry Journal. 2019;7(1):11-2.(146) **VI**. Scharoun L, Davey R, Cochrane T, Mews G. Designing healthy futures: involving primary school children in the co-design of a health report card. International Journal of Design Creativity and Innovation. 2018;7(4):237-55.(147) **VII**. Sharma A, Marshall A, Flynn D, Balaam M, editors. Participatory design methods to co-design and co-produce digital health technology with adolescents. 8th Annual Conference of the International Society for Bipolar Disorders & 8th Biennial Conference of the International Society for Affective Disorders; 2016; Newcastle.(148) **VIII.** Whitham R, Cruickshank L, Coupe G, Wareing LE, Pérez D. Health and Wellbeing: Challenging Co- Design for Difficult Conversations, Successes and Failures of the Leapfrog Approach. Design Journal. 2019;22:575-8.(149)

Critical review

The following section presents a critical review of the extracted literature that informed the model of co-design tested in this research. They describe the findings and implications for this research.

Co-design and youth empowerment

There have been no applications of co-design within a youth empowerment programme context.

Co-design within a Pasifika or Indigenous youth context

There were two academic journal articles on Pasifika or Indigenous co-design, both of which were in the digital mental health sphere in New Zealand and were a part of the National Science Challenge, *"A Better Start"* funding within the *"Resilient Teen"* category (144) (151). The first study evaluated the implementation of the *"YouthCHAT"* programme in primary health clinics in Te Tai Tokerau (Northland, NZ) using a co-design approach (144). Researchers asked Māori youth to provide feedback on their experience with the YouthCHAT app when they visited the clinic (144). The second research studied *"HABITs,"* a multi-age digital intervention app for improving youth mental health (151). Researchers worked with Māori, Pasifika, and other young people using the self-monitoring app during treatment of depression to evaluate and make improvements to it (151). Both co-design approaches captured the lived experiences of youth with mental health challenges and gathered expectations and motivations of young people as well as clinicians in treatment (151) (144). They also both claimed to align with the principles and values of *"kaupapa Māori"* (151) (144). However, the youth were not involved in the actual initial design or development phases of either app, weakening the co-design methodology to

more of a consultation process and how they enhanced kaupapa Māori was left unidentified (151) (144).

Co-design within a Pasifika or Indigenous context (non-youth)

Two results contained testable, pragmatic applications of co-design research methods in a non-youth Pasifika or Indigenous context. For this literature search, several other articles discussed or commented on co-design theory within an Indigenous context (155) (21) (156), however, were excluded because they did not involve a specific model nor tested process of co-design.

The first was a multiyear collaboration implementing the *"Pacific Literacy and School Leadership Programme"* (PLSLP), a programme initiated in 2014 by the New Zealand Aid Programme in partnership with Ministries of Education in three Pacific Island countries (152). The PLSLP was a massive, institutionalised exemplar of co-design within 42 different schools over three years. There was not one co-designed intervention, but rather multiple co-designed initiatives within different classrooms and schools. The co-design method involved three high-level processes: (i) *"profiling,"* i.e. collecting baseline data on current learning processes and developing prototypes with the facilitators, teachers and researchers; (ii) *"implementation,"* i.e. delivering and monitoring the desired changes; and (iii) *"sustainability,"* i.e. determining how to support the long-term uptake of the specific changes (152).

Co-design enabled the co-development of ideas as opposed to a traditional knowledge transfer from researchers to the local communities (152). Co-designing each phase of the intervention responded to the teaching and learning needs in each country and acknowledged the varied expertise needed to effectively work in each school, cultural, age, and socioeconomic setting

(152). The sustainability component distinguished this approach of co-design and empowered the communities to uptake the initiatives after the PLSLP ended.

The other seminal co-design research project within a Pacific context occurred in New Zealand. This research project used co-design to develop a culturally tailored, behaviour change mHealth (mobile health) intervention for Indigenous and other priority communities (i.e. Pasifika) (153) (154). The methods utilised an existing partnership between Māori and Pasifika partners and an academic research team to build off models of Māori and Pasifika holistic well-being. The model of co-design had five components: identifying an opportunity, identifying community needs, generating knowledge, envisioning, and developing the mHealth tool, and prototype testing. The prototype testing involved a 12-week, community-based, two-arm-cluster-randomised control trial of the mHealth tool, *"OL@-OR@."* Researchers concluded that the co-design process enabled and empowered users to tailor the intervention to the cultural specifications of their communities and that co-design, when done effectively, has the potential to marry ethnic-specific and Western theoretical frameworks of health to fit with Indigenous and ethnic priority groups (153) (154). This insight suggests that co-design is an effective means for collaboration that ensures community individualisation while still the advancing public health priorities of the mainstream New Zealand government.

Co-design with youth in a health or social change context

Eight references used co-design with youth in a health or social change context (142) (143) (144) (145) (146) (147) (148) (149). Five of the eight were employed within the mental health sector, and six of the eight developed digital health tools/ mobile apps. Others included

educational development, the design of other, non-pre-determined, interventions within the community and bridging the gap between health practitioners and youth receiving a particular health service.

Of the included references, four designed and tested new innovations (148) (147) (143) (149). One of the more robust examples used co-design to develop a mental health tool with design students and post-secondary faculty members, mental health service providers, and other stakeholders in Toronto, Canada (143). The team embarked on a five-year collaboration to research, design, and test an integrated digital crisis planning tool for youth (143). The co-design model incorporated five key activities: background research, community consultation, a collaborative design process, development (and design of a mobile health prototype), and launch (143). The entire research process engaged the youth, and the participants become familiar with design research, community engagement, co-design, and user-centred design. Notably, the co-design research design also fostered unanticipated personal growth in areas of emotional intelligence and soft-skills of leadership and communication (143). This research suggests that co-design is an effective way to engage in partnership-based research and that co-design enhances the capacities and capabilities of those involved.

The next reference described the partnership between *"Lifehack"* and the Ormiston Junior College (OJC) in Auckland, New Zealand (148). The Lifehack initiative stemmed from the former Prime Minister of New Zealand's *"Youth Mental Health Project"* (YMHP) (2021) (157) that rolled out programmes and activities in schools via health and community services to improve the mental health and wellbeing of young people. Lifehack was one of the funded projects that used co-design principles and processes to build the capability of the youth workforce, better identify local issues and youth vulnerabilities, and develop more effective and

contextual responses with the young people (148). The OJC co-design process included five weeks of workshops embedded within the classroom where youth: (i) explored concepts of identity and building relationships; (ii) learned about the four holistic dimensions of wellbeing; (iii) conducted a rapid design process to address the question, *"how might we improve the experience at our school?"*; (iv) built initial prototypes; and, (v) gathered community feedback on each prototype (148). Overall, the youth involved in the co-design process demonstrated increased self-efficacy, engagement, social participation, and overall wellbeing and positive development (148). The Lifehack project suggested that as well as developing prototypes, youth involved in co-design processes experience positive development outcomes. It also indicated that it is useful to involve multiple perspectives in the prototype evaluation, particularly when there are no parameters for the prototypes (there were no criteria within this project).

In another school setting, *"The Physical Activity and Lifestyle Management"* (PALM) project employed a co-design approach to enable young people and designers to develop a report card system to increase healthy habits and lifestyle behaviours (147). This co-design process encompassed a wide range of educational components to inform the youth about obesity prevention and gave young people agency over the behavioural change strategies suggested in the report cards. The most notable strength of this co-design was that it encouraged alternative forms of expression, allowing the participants to draw instead of verbalising thoughts. It also provided them with opportunities for storytelling to better involve their lived-experiences in the design phase (147).

The *"Leapfrog"* research collaboration in the UK also employed co-design with youth to develop tools that health practitioners could use to better communicate with young people in health and social care practices (149). The co-design process involved youth with lived

experience of health and social care services to participate in a three-day co-design retreat to reflect, share insight, and develop a collection of tools (i.e. digital health technologies) for health practitioners (149). The retreat provided ample opportunity for youth to share their experiences; however, the researchers noted that the youth participants needed additional support during the disclosure process (149). This research emphasises that co-design can elicit deep insight into youth/ community issues; however, that trained facilitators must conduct the retreats to ensure in a safe environment.

The other two references used co-design methods with young people to inform the development and adaptation of the existing digital health prototypes and to test the refined products (145) (142). They used co-design to gain insight on vulnerable populations and individual's lived experiences, similar to the OL@-OR@ mhealth tool (153) (154) and the YouthCHAT and HABITs initiatives (151) (144). The researchers concluded that co-design gained insight into young people's lived experiences as well as potential barriers to the uptake of digital health technologies. Involving vulnerable youth populations in the co-design process, especially those with language barriers and cultural differences, helped identify needs, issues, and preferences that would have otherwise been overlooked (145). They demonstrate that it is crucial to collaborate with the end-users, particularly in ethnic minority settings. The process of co-design also effectively built empathy between health practitioners and the youth (145) (142). They initiatives highlight the relational element of co-design that relationship-building must precede co-design processes of specific prototypes and initiatives.

Last, co-design was used by researchers in Scotland to ideate behavioural change strategies with homeless youth (146). It focused on educational development and employed co-design processes during several educational workshops as a framework for the youth to extract implications for

their daily lives. The researchers found that the co-design processes increased the youths' knowledge, allowed them to develop skills and practical coping mechanisms for the trials and tribulations of youth homelessness, and built relationships with fellow participants and the partnering NGO (146). It also emphasises the importance of group discussion after experiential workshops to extract more profound meaning and translational knowledge. Their research, however, used co-design as a method to generate ideas for behavioural change without ideating a specific tool or prototype, and there was no refining process or implementation strategy to "test" the ideas.

Co-design outside of a research setting

There is also a steadily growing number of co-design applications outside of formal research settings (158). A mere Google search reveals how co-design is now a commonly used term within systems change, funding strategies, and policymaking. They strive to take a human-centred rather than a system-led approach to innovation amongst NGOs, governments, and the private sector. Below are a few examples that were pertinent to this research.

"Le Va" is a Pasifika health charitable organisation in New Zealand whose purpose is *"to support Pasifika families and communities to unleash their full potential through carefully designing and developing evidence-based resources, tools, information, knowledge and support services for the best possible health and wellbeing outcomes"* (159). Le Va organised a conference for young Pasifika people, "Growing Pasifika Solutions," in 2016 and undertook a model of co-design to generate nine guidelines to support other organisations to engage with Pasifika young people (159). These guidelines fall under three categories: radical acceptance, absolute inclusion, and full participation (159). Similarly, the "Do Good Feel Good" initiative is

another Pasifika youth movement to foster agency and better involve young Pasifika people in their health. Young Pasifika leaders co-designed an online campaign to promote health and wellbeing and find ways to make health promotion relevant (160).

Within the government sector, one pertinent example was the Ministry of Social Development's initiative to co-design actionable ideas that encouraged positive, healthy lifestyle behaviour for young people in Te Hiku, a rural community in northern New Zealand. They worked intensively with young Pasifika and Māori people, youth workers, and the wider community to co-design and implement a pop-up youth space at the local community centre (161). The participatory process aligned with community values and celebrated people's strengths, built capacity in the youth sector, and was empowering for both the young people involved and the wider community (161). Notably, co-design allowed Pasifika youth to share their experiences in a structured and supported environment. They overcome the cultural expectation of youth to keep to themselves (161), which is novel because one of the key findings from this partnership was that Pasifika youth do not feel valued or celebrated by adults, they often feel judged. It was empowering for youth to have a safe space to share their experiences and contribute to bettering their communities (161).

At a District Health Board (DHB) level, the Waitemata DHB and Counties Manukau use co-design as one of the eight principles that underpin their current work and strategic direction (23) (162). Waitemata DHB outlined six main elements or phases of their co-design work (2010): engage, plan, explore, develop, decide and change (23). They provide exemplar workshops, community mapping, and interview templates for their employees and service providers. This denotes a shift in management structures and the vision for DBH operations in New Zealand and exemplifies that co-design approaches are becoming institutionalised and prolific in health.

Conclusions and conceptualising co-design in this research

This review investigated the existing literature on co-design and the varying definitions, applications, and usages of co-design in developing implementable systems change interventions. Some researchers include co-design as a tick-box exercise of terminology, while others embodied the principles and created practical, testable prototypes in collaborative and empowering ways. The following extrapolations summarise the key findings used within this research. Co-design:

(i) demonstrates success with young people to initiate community change (142) (143) (144) (145) (146) (147) (147) (148) (149);

(ii) co-design must be practical and either originate new prototypes for social change (143) (149) (147) (148) or modify existing ideas (145) (142) (many interventions used co-design as a theoretical base, however, did not provide a specific model or programme, nor did they develop a practical prototype (144) (151) (155) (21) (156));

(iii) interventions must incorporate sustainability (152);

(iv) offers community individualisation (143) (152) (157) and within a Pasifika setting, this must encompass the cultural provisions and socio-economic realities for Pasifika peoples and aligns to their model of health (152) (153) (154);

(v) increases youth participants' self-efficacy, engagement, social participation, and overall wellbeing and positive development (148), similar to the outcomes of empowerment programmes (157);

(vi) works well when embedded within an existing organisation, institution, or community group (157) and helps build relationships between the two (146); and, last;

(vii) must be evaluated from individual, organisation, and community levels (157).

Overall, three components comprised the conceptualisation of co-design in this research: (i) co-design is a highly collaborative process; (ii) co-design, when used effectively, originates new tools for social innovation and must illustrate a clear path for developing such tools; (iii) co-design exhibits potential to embed in other strengths-based programmes within existing organisations.

Part III: Programme evaluation and data analysis

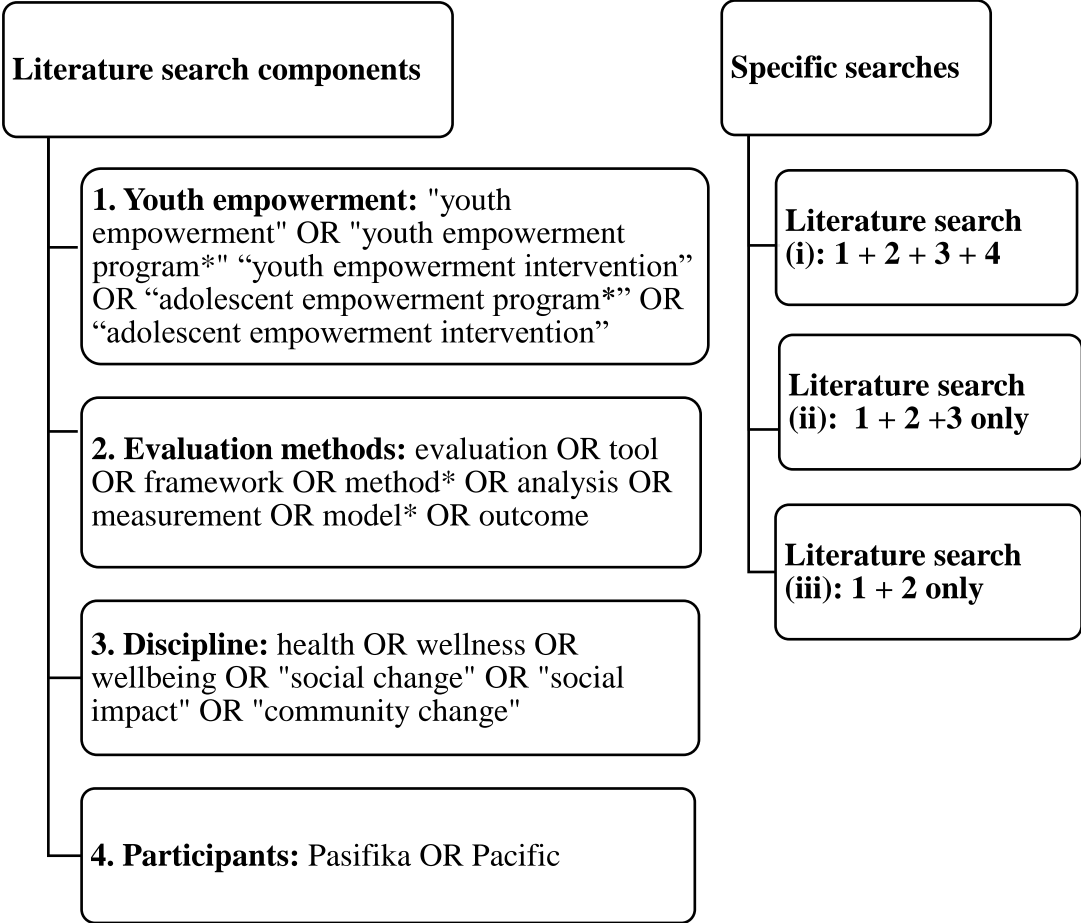
All transformative youth empowerment research has the complicated task of determining and evaluating programme effects. There are inherent challenges in empowerment programme evaluations because empowerment is a value-laden concept, definitions abound, and empowerment is not static. Empowerment is often a process of change rather than a set of finite outcomes. As such, a comprehensive, systematic review of evaluation strategies and research methods of existing youth empowerment programmes comprised a large part of the background research for this thesis. This review informed objective III of this research, evaluating the programme with an original framework of social change.

The following section presents the results from the literature review and substantiates why a qualitative approach was employed in this research.

Existing research on youth empowerment evaluation methods

The last literature review for this research included three different searches on empowerment programme evaluation under the following topics: (i) a Pasifika health context (ii); a health or social change context; and (iii) youth empowerment programme evaluation strategies (Figure 5).

Figure 5: Systematic literature review protocol for youth empowerment programme evaluation strategies



Each search was conducted first through Discover and then replicated on Scopus. Variations of each of the above terms were included. The search items were filtered within the last 20 years and showed results for items in the article title only of peer-reviewed journals. Exact duplicates were omitted. Results were exported to Endnote, and the titles and abstracts were also screened against four inclusion criteria. The youth empowerment programme:

(i) involves youth participants that are Pasifika, Indigenous, part of an ethnic minority in any developed country, or from any Pacific Island nation;

(ii) has a duration of at least ten weeks;

(iii) includes a method of evaluation (i.e. framework, analysis method, measurement, model, outcome etc.); and,

(iv) falls within the discipline of health, wellness, social change, social impact, or community change.

Table 3 presents the references included in this review (14) (19) (163) (164) (18) (165) (166) (128) (167) (165) (168) (169) (170) (171) (108) (108).

Table 3: Programme evaluation literature search results

Key literature search (i)		
Theme	**Search terms**	**Results that fit search criteria (1/1) where * is a repeat reference**
Literature relevant to empowerment programme evaluation in a Pasifika health context	TI Title: Youth empowerment program* OR “youth empowerment intervention” OR “adolescent empowerment program*” OR “adolescent	**I.** Tupai-Firestone R, Matheson A, Prapavessis D, Hamara M, Kaholokula KA, Tuisano H, Tevita G, Henderson J, Schleser M, Ellison-Loschmann L. Pasifika Youth Empowerment Programme: a potential public health approach in tackling obesity-health related issues. AlterNative: An International Journal of Indigenous Peoples. 2018 Mar;14(1):63-72.(14)

	empowerment intervention" + evaluation OR tool OR framework OR method* OR analysis OR measurement OR model* OR outcome + health OR wellness OR wellbeing OR "social change" OR "social impact" OR "community change" + Pasifika OR Pacific	

Refined search (ii)

Theme	**Search terms**	**Results that fit search criteria (8/61) where * is a repeat reference**
Literature relevant to empowerment programme evaluation in a health or social change context	TI title: Youth empowerment program* OR youth empowerment intervention OR adolescent empowerment program* OR adolescent empowerment intervention + evaluation OR tool OR framework OR method* OR analysis OR measurement OR model* OR outcome + health OR wellness OR wellbeing OR	**I.** * Tupai-Firestone R, Matheson A, Prapavessis D, Hamara M, Kaholokula KA, Tuisano H, Tevita G, Henderson J, Schleser M, Ellison-Loschmann L. Pasifika Youth Empowerment Programme: a potential public health approach in tackling obesity-health related issues. AlterNative: An International Journal of Indigenous Peoples. 2018 Mar;14(1):63-72. (14) **II.** Zimmerman MA, Eisman AB, Reischl TM, Morrel-Samuels S, Stoddard S, Miller AL, Hutchison P, Franzen S, Rupp L. Youth empowerment solutions: Evaluation of an after-school program to engage middle school students in community change. Health Education & Behavior. 2018 Feb;45(1):20-31. (19) **III.** Franzen S, Morrel-Samuels S, Reischl TM, Zimmerman MA. Using process evaluation to strengthen intergenerational partnerships in the Youth Empowerment Solutions program. Journal of prevention & intervention in the community. 2009 Oct 16;37(4):289-301. (163) **IV.** Marr-Lyon L, Young K, Quintero G. An evaluation of youth empowerment tobacco prevention programs in the Southwest. Journal of drug education. 2008 Mar;38(1):39-53. (164)

	"social change" OR "social impact" OR "community change"	**V.** Lewis RK, Lee FA, Brown KK, LoCurto J, Stowell D, Maryman J, et al. Youth empowerment implementation project evaluation results: A program designed to improve the health and well-being of low-income African-American adolescents. Journal of Prevention and Intervention in the Community. 2018;46(1):28-42.(18) **VI.** Moody KA, Childs JC, Sepples SB. Intervening with at-risk youth: evaluation of the youth empowerment and support program. Pediatric nursing. 2003 Jul 1;29(4):263-73.(165) **VII.** Ballard PJ, Cohen AK, Duarte C. Can a school-based civic empowerment intervention support adolescent health?. Preventive Medicine Reports. 2019 Aug 23:100968. (166) **VIII.** Berg M, Coman E, Schensul JJ. Youth action research for prevention: A multi-level intervention designed to increase efficacy and empowerment among urban youth. American journal of community psychology. 2009 Jun;43(3-4):345-59. (128)
	Refined search (iii)	
Theme	**Search terms**	**Results that fit search criteria (11/94) where * is a repeat reference**
Looking to broader youth empowerment programme evaluation outside of a health context	TI title Youth empowerment program* OR youth empowerment intervention OR adolescent empowerment program* OR adolescent empowerment intervention + evaluation OR tool OR framework OR method* OR analysis OR measurement OR model* OR outcome	**I.** * Tupai-Firestone R, Matheson A, Prapavessis D, Hamara M, Kaholokula KA, Tuisano H, Tevita G, Henderson J, Schleser M, Ellison-Loschmann L. Pasifika Youth Empowerment Programme: a potential public health approach in tackling obesity-health related issues. AlterNative: An International Journal of Indigenous Peoples. 2018 Mar;14(1):63-72. (14) **II.** * Moody KA, Childs JC, Sepples SB. Intervening with at-risk youth: evaluation of the youth empowerment and support program. Pediatric nursing. 2003 Jul 1;29(4):263-73. (165) **III.** Pearrow MM. A critical examination of an urban-based youth empowerment strategy: The teen empowerment program. Journal of Community Practice. 2008 Dec 4;16(4):509-25.(167) **IV.** Sharma A, Suarez-Balcazar Y, Baetke M. Empowerment evaluation of a youth leadership training program. Journal of Prevention & Intervention in the Community. 2003 Nov 10;26(2):89-103. (165) **V.** Batista T, Johnson A, Friedmann LB. The effects of youth empowerment programs on the psychological empowerment of young people ageing

		out of foster care. Journal of the Society for Social Work and Research. 2018 Dec 1;9(4):531-49.(168) **VI.** Wallerstein N, Martinez L. Empowerment evaluation: a case study of an adolescent substance abuse prevention program in New Mexico. Evaluation Practice. 1994 Jan;15(2):131-8. (169) **VII.** Gullan RL, Power TJ, Leff SS. The role of empowerment in a school-based community service program with inner-city, minority youth. Journal of adolescent research. 2013 Nov;28(6):664-89.(170) **VIII.** Collins KM. Youth empowerment programs: Using a program evaluation framework to identify developmental outcomes of youth empowerment. Dissertation Abstracts International: Section B: The Sciences and Engineering. 2014;74(7-B(E)).(171) **IX**. Schulz AJ, Israel BA, Zimmerman MA, Checkoway BN. Empowerment as a multi-level construct: perceived control at the individual, organisational and community levels. Health Education Research. 1995 Sep 1;10(3):309-27.(108) **X.** Roberts-Gray C, Steinfeld S, Bailey W. Goal setting and progress evaluation in youth empowerment programs. Evaluation and program planning. 1999 Mar 1;22(1):21-30. (172) **XI.** Ferrera MJ, Sacks TK, Perez M, Nixon JP, Asis D, Coleman WL. Empowering immigrant youth in Chicago: Utilizing CBPR to document the impact of a Youth Health Service Corps program. Family and Community Health. 2015;38(1):12-21.(16)

Critical review

This section presents a critical review of the literature's strengths, shortcomings, and implications for this research. Twelve studies employed quantitative techniques (19) (108) (164) (18) (165) (166) (167) (165) (168) (169) (170) (171), two employed qualitative measures (169) (16), and four employed mixed methods (172) (163) (128) (14). Of important note, this section does not describe the specific outcomes of the empowerment programmes (i.e. the results, conclusions, nor programme impact). This critical review concerned the methods of evaluation, as opposed to the effect of the programme itself.

Quantitative methods

Of the reviewed methods, one programme used a randomised control trial (RCT) with an intervention and control group (19), and one used a non-randomised control design with a measure of pre-and post-programme data (168). The remainder used statistical tests on all participant data (108) (164) (18) (165) (166) (167) (165) (169) (170) (171). All twelve quantitative studies administered a survey with closed-ended questions using a 4-5 point Likert scale of agreeance (i.e. "strongly disagree," "disagree," "neutral," "agree," or "strongly agree") (19) (108) (164) (18) (165) (166) (167) (165) (168) (169) (170) (171). Another important consistency amongst all quantitative survey types was that the researchers themselves administrated the questionnaire to limit biases and inconsistencies in data collection.

There were three types of surveys: those developed by the researchers, those developed in collaboration with community members, and those that administered a predetermined, standardised protocol. The researcher-driven surveys enabled the questions to fit the specific empowerment programme and research objectives, however, overlooked the participant's experiences and context. Those constructed in collaboration with the community encouraged the entire team to reflect on the programme and select key indicators themselves (e.g. self-determination); however, the results from those surveys could not be compared to other programme outcomes. Simultaneously, using existing questionnaires or models allowed for greater standardisation and comparison with other programmes; however, they could not account for participants' subjective experiences and contexts.

The RCT and non-randomised control designs allowed the researchers to validate empowerment outcomes between the two groups. However, both research designs faced limitations of small

sample sizes and, therefore, had low statistical power (19) (168). There were also significant ethical challenges with randomisation and the community. Both studies stated that it was contentious amongst the community for some youth to receive the intervention while others did not since the programme outcomes were advantageous to those receiving the intervention. For the programmes with a large enough sample size, the quantitative analysis offered robust comparisons between the groups (19) and a strong comparison between the different empowerment variables (164). Most of the quantitative programme evaluations, however, were often limited by low sample sizes. The programmes with small sample sizes ($n<30$ participants) only had descriptive statistics and, therefore, low generalisability (165) (171) (18).

Many references were also limited because of the sole focus on the impact on the youth only (18) (108) (171) (170) (168) (165) (166) (165) (19), disregarding programme sustainability and the effects on the existing service, programme, school, or community group. Two quantitative evaluations strategies incorporated individual and community levels of change (167) (108) and only one quantitative evaluation strategy included an organisational component (164). The organisational component evaluation also contained questions that captured the youth's personal belief that they could create change in their community as opposed to personal development and, therefore, had a knowledge translation component (164). It was the most robust and multi-dimensional quantitative evaluation.

The quantitative approaches also lacked opportunities for researchers to ask reflective and interpretive questions to gain more in-depth insight into a particular item, theme, or outcome (168) (170). Often, the scales used in the analyses, therefore, provided only a partial measure of empowerment (95). Further, it was difficult to discern the multi-layer components of the intervention in terms of impact on the youth. Since youth age is a time of rapid change, it was

difficult to distinguish between a natural difference in variables and the change resulting from the programme without qualitative methods to ask open-ended questions (18) (170).

Last, although the quantitative evaluations set clear objectives, they were restricted to the questions determined a priori, especially those that were generated by the researchers who may have misunderstood the youth, their community contexts, or the nature of the empowerment programme itself (19). These surveys had no way to account for emergent outcomes of empowerment such as increased social capital, social connectedness, or structural change (166), the effect on the participants' families, the knowledge gained (18), or group interactions and community impacts (168).

Qualitative methods

From the literature review, the two qualitative data collection methods included focus group discussions (FGD) (169) (16), pre-and post-interviews with youth participants and the programme facilitators/ organisers (16), and observational notes (i.e. field notes) (169). The qualitative techniques allowed youth to contribute their reflections and interpretations of the programme (169) (16). The youth were encouraged to reflect on their subjective experiences within the programme and provided a safe place to share insight into their family structure, community function, and health outcomes with the broader group (16).

Researchers concluded that FGD sparked the most extensive content (169) (16). The interviews also provided a rich opportunity for the participants to share personal experiences and stories relevant to their lives, described by them (16). Researchers noted that it was integral that the FGD and interviews were conducted by familiar facilitators to the youth, encouraging them to share earnestly. The qualitative techniques also allowed for themes to emerge that the

researchers noted would have been unpredictable (169) (16). One of the data analysis was driven by grounded theory, where the youth participants categorised the emergent themes of the transcribed data themselves, ensuring self-determination (169). The other reference used interpretive frame analysis, an interactive process that is often used within ethnic communities, to provide the participants with opportunities to share their lived experiences (16). These studies suggest that participants in qualitative designs are empowered to participate more intimately in the research, which ensures that the findings accurately represent their lives.

There were also limitations of the qualitative techniques. First, both studies claimed that it was difficult to focus on the analyses and determine if the research fulfilled its objectives (169) (16). Second, it was difficult to standardise the programme outcomes and compare them to the existing body of literature. Third, one of the studies noted that it was time-consuming to train the programme facilitators in qualitative research techniques and that often, this person was a part of an existing organisation with competing time constraints and responsibilities (16). Last, from a study design perspective, one programme used an intervention and control group (169) that allowed for comparison. However, the school administrators (i.e. the research partner organisation) expressed concern that the randomisation of the control did not serve the purpose of bettering the lives of the participants and, therefore, resulted in tensions between the community needs and the research funders (169).

Mixed methods

Four research programmes in the literature review employed mixed methods approaches that combine qualitative and quantitative techniques (173) (163), including the YEP pilot study (14) and three others (172) (163) (128). The mixed methods references strived to evaluate the

programmes holistically, however, were only successful when they had a large sample to conduct meaningful statistical analyses (including attrition), appropriate and relevant quantitative questions, and the ability to perform process evaluation.

All four research designs used a 5-point Likert scale quantitative surveys, and a mix of qualitative methods including FGD, interviews, and photovoice methods (coined within the YEP as “mobile-mentaries” or digital narratives (14)). The quantitative strand in the pilot YEP was limited by the small sample size, and, therefore, no meaningful statistical conclusions were drawn (14). The narrow scope of the questions limited the other quantitative strands (172) (163), often irrelevant to youth transformation. One of the surveys did provide meaningful descriptive data on programme satisfaction; however, this was not enough to complete a quantitative strand with statistical applications (163). The most effective evaluation administered the quantitative survey at three time-points throughout the research process (128). The researchers could use this to compare the results of those that completed the programme with those that did not and was the only youth empowerment programme in the systematic review that incorporated some measure of attrition (128).

The qualitative strands, similar to the above review, encouraged the youth participants to reflect and articulate their subjective experiences. The researchers also concluded that the FGD sparked the most extensive content (163) (172), and the mobilementaries demonstrated that using innovate qualitative tools provides a novel way to capture the voice of youth (14). One of the references employed process evaluation, which enabled researchers to extract deeper meaning on specific topics of interest. Process evaluation occurs when one strand of data informed the structure and collection of the next (i.e. the outcomes of the quantitative analysis informed the development of the qualitative FGD and one on one interview questions) (163).

Programme evaluation summary and conclusions

Based on this review, a qualitative research design was used in this research. Qualitative methods would capture subjective experiences and empowered participants to articulate their beliefs, values, and motivations that underlie individual health behaviours (174). They contextualise and ascribe meaning to the humanistic and subjective experiences of participants (175) and are particularly useful to understand complex social processes, such as social change. The specific research methods are outlined in the following chapter, describing how the methods employed in this research overcame some of the limitations discovered within the critical review.

Te Tiriti o Waitangi

It would be inappropriate to research in Aotearoa/ New Zealand without acknowledging Te Tiriti o Waitangi, especially since health is inextricably linked to the land, place, and the deep-seated history of the peoples in it. All players of this research acknowledged, supported, and respected Te Tiriti o Waitangi as the foundation for our relationship with tangata whenua (the Indigenous peoples). With this, comes the acknowledgement of the history, mythology, and cosmological beliefs of New Zealand Māori and the entrenched impacts of colonialism that continue to influence legal and institutionalised systems, as well as modern culture. Pasifika peoples recognise the close connection of their people to tangata whenua, culturally and genealogically, through te moana nui ā kiwa (greater Oceania kinship connections). They have a deep respect for the tangata whenua of this land.

It is an overarching goal of the PPYEP and this research to improve health inequity for Pasifika communities, and ultimately, all rangatahi (young peoples) throughout New Zealand.

Chapter summary and conclusions

A social change approach to prediabetes prevention ascertains that individualised lifestyle modifications consistently lead to NCD risk factor reduction, prevention, and stabilisation (12) (7) (7). It recognises the multiple components involved in encouraging healthier lifestyles and considers health as more than improvements in individual health outcomes and strives to achieve a culture of wellbeing (176). For Pasifika health, a social change approach encapsulates the individual and institutional participation needed to encourage healthy lifestyles and recognises that sustainable, long-term change towards healthier lifestyles involves communities.

Youth empowerment programmes and co-design approaches share fundamental commonalities in their purpose and outcomes in health promotion. The reviews highlight existing strengths and gaps in the literature on youth empowerment and co-design in a Pasifika health and social change context. They informed the theorisations of youth empowerment and co-design employed in this research as well as the practical programmatic research design (i.e. programme development, adaptation for each community, and delivery). They substantiated findings from the pilot YEP and built a case for why co-design is a promising tool to design healthy lifestyle interventions with Pasifika youth. As evidenced in this section, there is not a standardised protocol, nor tested model of co-design within a youth empowerment context, nominally, demonstrating the *"gap"* for this research to fulfil.

Last, this background substantiated that there is no standardised protocol for the evaluation of youth empowerment programmes. Based on the review, a qualitative design was selected to

evaluate the tested programme from a social change perspective and capture the subjective experiences and transformation of the youth and community partners.

Chapter 3: Research methods

Chapter 3 delineates the methodological principles that informed this research and describes the specific research design employed. It introduces the community partners and outlines the programme development, sample, and delivery.

Research methodology

This research employed a *"Community-Based Participatory Research"* (CBPR) methodology. CBPR is a highly participatory, action-orientated research methodology that has gained momentum in public health since its inception in the 1970s (177) (178) (112) (179) (180) (181) (182) (176) (183). CBPR approaches research collaboratively, wherein all players (including participants, health practitioners, community members, and academic researchers) are empowered to contribute expertise, share decision-making, and take ownership of all aspects of the research process (184) (185) (180).

CBPR illustrates the shift in public health approaches from an examination of epidemiological health status (186) to one of health promotion (68) and health equity (187) (118) (44). It aligns to the call for public health to better integrate research and practice (187) (188) (189), increase community involvement, partnerships, and organisation (190) (191) (192) (119) (179), include more holistic, partnership-based research methods (180) (193), and account for cultural provisions of ethnic-specific communities (68) (194) (195). Ultimately, CBPR aligned with the research context and broader PPYEP objectives.

Origins of Community-Based Participatory Research

The origins of CBPR trace back to the development of *"Participatory Action Research"* (PAR) (178). PAR methodologies recognise that community issues are complex and can only be solved when community members themselves are involved in the research process (196). All PAR approaches concern conducting research that benefits its participants through direct involvement to inform action for positive change (119). They are less concerned with ontological differences in ways of constructing scientific knowledge and more on how this

knowledge improves the lives of people and communities (119). CBPR and PAR both encompass a broad range of methodological terminology from *"community-based/ involved/ collaborative/ centred"* research to "*participatory-action/ cooperative/ evaluation/ empowerment evaluation/ inquiry"* methodologies (177) (178) (112) (179) (180) (181) (182) (176). Despite nuanced differences between each, there are common principles. Seminal community health researcher, Israel et al. (1998) conducted a long-standing review of CBPR and identified eight key principles (119).

All CBPR methodologies:

(i) recognise the "community" as a unit of identity created through social interactions and the conceptualisation of "collective;"

(ii) build on strengths and resources in the community in both issue identification and generating solutions;

(iii) facilitate collaborative partnerships in all phases of the research process;

(iv) integrate knowledge and action for the mutual benefit of all partners involved in social change processes;

(v) promote co-learning and empowering processes that deconstruct social inequalities and inspire community members to share voice and decision-making;

(vi) affect a cyclic and interactive approach to provide the ongoing opportunity for input and mechanisms of sustainability;

(vii) address health from an ecological perspective and acknowledge that health is holistic and more than biological; and,

(viii) disseminate the research findings to all partners to ensure that valuable information can be used to drive change.

These eight principles laid the foundation for this research design and were consistently reviewed throughout the PPYEP. CBPR also aligns with the objectives of empowerment and are often used in empowerment contexts. Community-based empowerment researchers Wallerstein and Duran (2008) eloquently captured the CBPR stance employed in this research in their work on the conceptual, historical, and practice roots of CBPR. They described that:

> *"... CBPR is a collaborative approach to research that equitably involves all partners in the research process and recognises the unique strengths that each brings. [It] begins with a research topic of importance to the community with the aim of combining knowledge and action for social change to improve community health and eliminate health disparities"* (p. 4) (197).

CBPR is a promising approach within this research context to work with Pasifika communities and youth in participatory, empowering ways. There is a growing body of literature to support CBPR methodologies with Pasifika and other Indigenous groups because they respect cultural values, encourage participation, and provide continual opportunity to adapt the research processes (192) (198) (199) (200) (201) (202) (116). There is a particular responsibility that comes with being a CBPR researcher, however, to bridge the gap between theory (that is often entrenched in academic jargon) and communities. Although CBPR postulates a way of understanding Pasifika-specific worldviews and strives to generate knowledge with Pasifika peoples and for Pasifika health advancement, the practical actualisations of these goals are more important. These are elaborated within the next section.

Research paradigm and worldview

CBPR methodologies have a complicated task of declaring one coherent research worldview, ontology, or paradigm because they involve community-determination and the co-creation of knowledge. Although the purpose of this thesis was not to investigate, nor scrutinise different philosophical research paradigms, it was necessary to declare the overarching stance on its acquisition of knowledge, the assumptions it holds, and how it contributes to the broader body of public health literature (183).

PAR and CBPR typically fall under the pragmatic philosophical research paradigm that links research to action (203) (204). Pragmatists believe that reality is derived directly from experience, and therefore, one's existence is continuously renegotiated, debated, and interpreted (205). Pragmatists consider that all knowledge is based on experience (206) (207). Pragmatist research positions that knowledge (and, by extension, science) must acknowledge subjective experiences, particularly for unique priority groups like Pasifika peoples. Wallerstein and Duran (2008) described that pragmatism challenged the long-standing positivist paradigm that approached truth as definitive and stated that only through empirical objectivity can one acquire academic knowledge (197) (208). PAR researchers, alternatively, ascertain that it is important to understand personal experience when deciphering reality and challenged deep-seated power relations of positivist academia. They acknowledge that reality is context-dependent and advocated that individualistic, participatory descriptions of one's experiences generate knowledge that is relevant to their lives and, therefore, useful to advance social change outcomes (208) (209) (182).

The pragmatists focus on actionable knowledge aligned with the research objectives. It built upon the stance of Dewey, a seminal pragmatist researcher, who emphasised that the primary

function of research is to solve societal problems while providing flexibility to adapt to emergent needs of people (207). At the core of pragmatism is the rejection of the *“impossible questions”* of philosophy. Instead, it states that the question of the nature of reality is redundant and can never be perfect, nor is the answer required to conduct meaningful research (210) (211). In contrast to other worldviews that emphasise the nature of reality, pragmatists emphasise the nature of experience and focus on the outcomes of research, the process of inquiry to develop new approaches to societal problems, and whether or not knowledge is useful (206) (207). Learning is only meaningful when coupled with action because at the crux of pragmatism is problem-solving (182) (183).

Within this research, pragmatism underpinned the specific research methods to not only achieve the research objectives, but rather, establish principles for building community partnerships, empowering youth, and driving social change. It also allowed for the research to acknowledge Pasifika-specific worldviews and empower individuals and communities to ascribe meaning to their unique reality. Ultimately, the community partners and youth participants did not care about the theoretical underpinnings of the research methods; they cared about how the research valued and benefited them as people.

Research design

This research design used a multi-method qualitative approach. Consistent with CBPR principles, it began with partnership development (212), emphasised practice over theory (213) (214) (215) (178), and ensured self-determination (169). The following section introduces the community partners and programme sample and describes the qualitative data collection and analysis methods. It presents the framework of evaluation developed for this research and the techniques employed to ensure the validity and trustworthiness of the data.

Introducing the community partners

Objective II of this research was to co-deliver a youth empowerment programme within two Pasifika communities. Objective II was achieved within the larger PPYEP research project, a partnership between researchers at Massey University and two Pasifika community health service providers, the South Waikato Pacific Islands Services Trust (SWPICS), Tokoroa, and The Fono, Henderson, Auckland. The PPYEP was achievable because of rapport built over the years with SWPICS and The Fono. PI Riz Firestone has worked with both SWPICS and The Fono on several Pasifika research projects and has a sincere interest in the well-being and future of these community partners. Maintaining and upholding strong, value-based relationships with the youth and community partners was a top priority within this research design.

South Waikato Pacific Islands Services Trust (SWPICS), community partner, Tokoroa, South Waikato

Figure 6: Community partner, Tokoroa, South Waikato

Tokoroa is a small, rural town in South Waikato. Tokoroa's economy revolves around the timber and dairy industries. Tokoroa has a population of 14,700 people, of which, 20% are Pasifika. Most Pasifika peoples in Tokoroa are Cook Island (85%). Tokoroa ranks in the highest level of deprivation based on the New Zealand Index of Multiple Deprivation (IMD) (216). Statistically, Tokoroa has high unemployment, crime, and health deprivation (216). The Waikato DHB services Tokoroa.

One of the most notable features of the community is the strong sense of Pasifika identity, supported by the South Waikato Pacific Islands Services Trust. (SWPICS). SWPICS is a part of the Are Tai Pacific Midland Collective, a collaboration of Pasifika health providers. SWPICS delivers a range of community health, social, and Whānau Ora (family health and wellbeing) services to Pasifika peoples of Tokoroa and the surrounding areas. They offer both primary community nursing and social and family support services, and they are a

central cultural pillar for the Pasifika community. SWPICS CEO, Akarere Henry, and community research facilitator, Elizabeth Okiakama, were influential stakeholders of the PPYEP and were intimately involved in this research.

The Fono, community partner, Henderson, Auckland

Figure 7: Community partner, Henderson, West Auckland

Henderson is a central suburb of West Auckland with a population of 107,670. It has high diversity, with a notable heterogeneity of neighbourhoods, employment type, ethnicity, and culture. Henderson also ranked in the highest deprived zone based on employment, income, crime, housing, health, education, and access to services (217). The Waitematā DHB services Henderson.

Pasifika peoples comprise 42.5% of Henderson's population, making it one of the densest Pacific Island communities in New Zealand. Pasifika identity in Henderson strongly links to ethnicity and church. The denomination and specific church that families attend influences peoples' daily routines, community obligations, and perspectives.

The Fono is one of the key Pasifika health service centres in the area, offering a wide range of medical, dental, pharmacy, social, and public health services for individual patients and Whānau Ora (family and community wellbeing programme). They are a part of a more extensive network of service centres in the Auckland region, resulting from affiliation agreements between The West Fono Health Trust and Pasifika Horizon Healthcare (2013) and The Peoples Centre Trust (2012). Since pooling resources with these organisations, The Fono has distinguished itself as a hub for community, service, and public health work for Pasifika peoples in Auckland. The Fono Chief Executive, Tevita Filisonu'u Funaki, and community research facilitator, Gavin Faeamani, were also highly involved in the PPYEP partnership and research process.

Programme sample

The community research facilitators conducted most of the youth participant recruitment throughout February-April 2018. They performed a form of convenience sampling and utilised their existing work and social networks to access potential participants. They also went through the church communities and invited them to participate in the programme. The churches identified programme participants based on existing leadership potential, interest in health, or who they wanted to represent their community. There was a predetermined target of n=15 Pasifika youth from each location. The recruitment techniques and sample size were informed by the previous youth empowerment programme to optimise programme engagement (14). Age and Pasifika ethnicity, regardless of specific Pacific nationality, were the two criteria for inclusion. The programme did not consider the youth's incidence of prediabetes or displayed risk factors for T2DM.

The final programme sample (N=29/41) included Pasifika youth aged 15-24 years that completed the programme. The overall programme retention was 71%. The sample included youth from both Tokoroa and Henderson, as this research investigated the programme as one larger entity. Table 4 presents the programme sample and demographic variables. Participant demographic differences and retention will be elaborated within the results and discussion chapters.

Table 4: Participant demographic data

	Started programme (n)			**Retained N (%)**		
	Total	**Tokoroa**	**Henderson**	**Total**	**Tokoroa**	**Henderson**
	41	18	23	29 (70.73)	14 (77.77)	15 (65.22)
Gender						
Male	12	5	7	7 (58.33)	3 (60.00)	4 (57.14)
Female	29	13	16	22 (75.86)	11 (84.61)	11 (68.75)
Ethnicity						
Cook Island	16	16	0	12 (75.00)	12 (75.00)	0
Samoan	7	1	6	6 (85.71)	1 (100)	5 (83.33)
Tokelauan	1	1	0	1 (100.00)	1 (100)	0
Tongan	12	0	12	8 (66.67)	0	8 (66.67)
Tuvaluan	5	0	5	2 (40.0.0)	0	2 (40.0)
Age						
Mean	17.29	16.11	18.17	17.03	16.03	17.78

Of the 12 participants that did not complete the programme, six participants disclosed reasons for discontinuation: two participants started university papers, one fell pregnant, one joined the military, one moved to a new city, and one had competing school obligations. The remaining six participants discontinued the programme without provided justification. For the participants who did not complete the programme, data collected before their withdrawal was used, following the procedures outlined in the consent form. Participants signed consent forms and if they were under the age of 18 years, required parental/guardian consent. The previous pilot study also informed the consent form, which clearly defined the research

objectives and expected commitments of the participants. The consent form explained how the data were going to be used and disseminated and outlined the measures to maintain anonymity and confidentiality. It also outlined that youth could determine their boundaries with participation and that they could step back at any point in the research. During the first workshop, this consent process was discussed to ensure that the youth thoroughly understood the research and consent process. The youth received ID numbers for attendance and the youth responses for the data collection techniques (to be described below), were anonymous. All youth participants consented to have photos taken of them and that they can be used in this thesis. All photos of the youth in the programme were taken by the research facilitators and are stored on the Centre for Public Health Research (CPHR) secure network at Massey University.

Research methods

Objective III of this research was to evaluate the tested programme using an original framework of social change. This section describes the framework of social change developed within this research, and the qualitative research design, data collection, and analysis methods employed.

Introducing the "5 Pillars of Social Change" framework of evaluation

The *"5 Pillars of Social Change"* framework of evaluation was founded off the pilot study (14) and further developed within this research to capture how the programme contributed to a process of social change towards healthy lifestyles. The framework encapsulates five different components of social change (i.e. "pillars") and proposes three levels in which social change occurs (Figure 8).

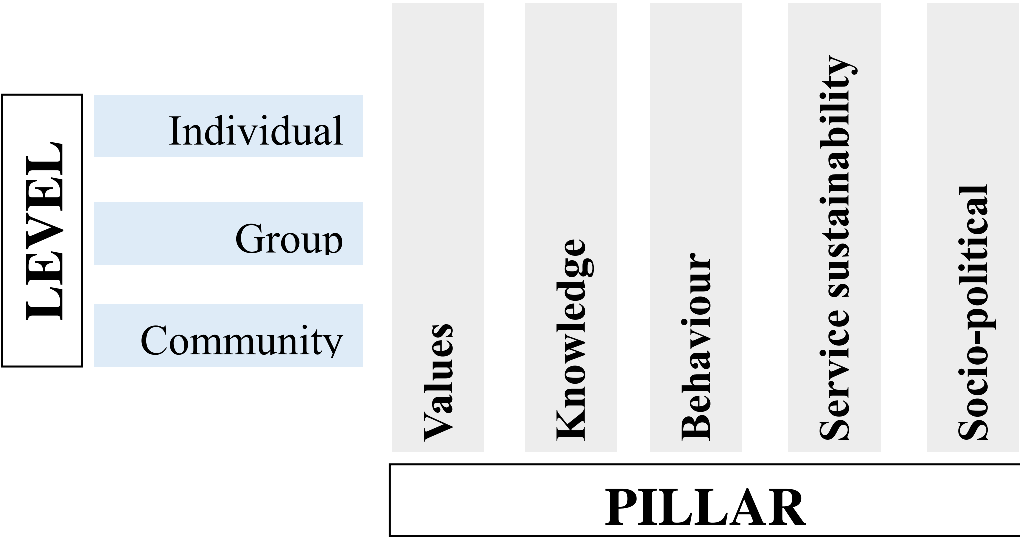


Figure 8: The "5 Pillars of Social Change" framework of evaluation

The five pillars were informed by the background literature review on social change (69) (70) (73) (78) (72) (74) (75) (76) (218) and empowerment theorisations (14) (19) (163) (164) (18) (165) (166) (128) (167) (219) (168) (169) (170) (171) (108) (108). The three levels were

based off two fundamental theories: the Social Change Model of Leadership (79) and Zimmerman's empowerment philosophies (141) (108) (96). Each pillar comprises a component of social change, and each level outlined the orders of transformational change that were defined *a priori* to analysis (Table 5).

Table 5: Description of the "5 Pillars of Social Change" framework of evaluation

	Pillars
Values	Development of personal values, principles, or beliefs
Knowledge	Increased awareness and intellectual skills development; awareness encompassed three types – self-awareness, awareness about prediabetes, and awareness about social change
Behaviour	Changes in individual, group, or community actions; not only on the capacities learned but rather, those put into practice
Service sustainability	Change within the community health service organisations or the support of other organisations, social movements, and campaigns
Socio-political	Macro changes in social/cultural norms, policy, and decision-making processes
	Level
Individual	Youth's transformation
Group	Group change in Tokoroa and Henderson or the community health service organisation
Community	Citizenship exhibited by youth, the engagement of the wider community, and the evolution of cultural norms

The social change framework of evaluation ascertained that transformative programming encompasses more than the uptake of pro-health behaviours and includes processes that progress society in a particular direction. In this research context, social change concerned moving society towards long-term health, with youth as the catalysts of change (78) (69) (72). Although the pillars and levels were identified before the programme evaluation, the data collection and analysis methods captured how they were experienced and perceived by the participants and community partners. Their input evidenced more nuanced definitions and conceptualisations of the framework that are elaborated within the discussion and conclusion chapters of this thesis.

Qualitative research design

A multi-method qualitative design fit this research context for several reasons. First, much like CBPR, qualitative research aims to address questions concerned with activating social change (220) (214). It encourages methods to suit community needs and ensure that the outcomes are effectively disseminated and used by the community involved (221) (222) (223) (128).

Qualitative methods are characterised by inductive and often unrestricted methods (224) that explore social and behavioural issues (225) and tailor research to fit the specific community context. Abbatangelo-Gray et al. (2007) (226) and Resnicow et al. (2008) (227) emphasise that health promotion research interventions depend on tailoring the research design to generate evidence that is useful to affect positive change and, therefore, a better understanding of public health issues (225).

Second, it is imperative to ensure that CBPR designs portray the voice of culturally diverse communities and acknowledge the norms, behaviours, values, and beliefs of each context (227). Voice is particularly essential when the culture involved differs from mainstream society and is marginalised in formal discourse and theory (228). Qualitative methods have advanced over the past two decades (208) (229) to develop specific research designs that allow for greater voice as well as reciprocity, self-determination and sacredness of culture (230). More formal qualitative methods offer a Pasifika-lens on research (228) (231) and overcome limitations of positivism and other postmodern critical theory based on Westernised worldviews (211). By empowering all players to reflect and articulate their experiences, qualitative methods overcome concerns regarding objectivity versus subjectivity, positionality, voice, and community-embeddedness (224).

Third, qualitative methods enable outcomes to emerge, overcoming barriers of pre-determined quantitative counterparts. They empower participants to have a more active role in the research process (213) and generate open-ended data that ascribe meaning to the humanistic and subjective experiences of participants, as understood by them (175). In this context, the "researchers" included youth, community research facilitators, and community partner organisations.

Last, based on the systematic literature review, qualitative techniques allowed youth to contribute their reflections and interpretations of the particular empowerment programme and their experience with the research process (169) (16). Qualitative data were particularly useful to understand complex social processes and to uncover beliefs, values, and motivations that underlie social change behaviours (174). They allowed for themes to emerge that the researchers noted would have been unpredictable using quantitative techniques (169) (163) (16).

Data collection

This research employed four data collection techniques: a module evaluation survey, mobile-mentaries storytelling, focus group discussions (FGD), and key informant interviews. They gathered data on the programme impacts and uptake and elaborated on the participant and community perspectives on the framework of social change. The questions for each data source were based on the original research objectives, reviewed by the PPYEP's PI and the community research facilitators, and tested for readability and comprehensibility with 32 youth from Massey University (including 3 Pasifika youth). All digital data were stored on the Centre for Public Health Research (CPHR) secure network and paper-based data were stored in a locked cabinet in the Principal Investigator's office.

Weekly module evaluation survey

The youth completed a brief, anonymous evaluation survey after each module. The survey responses were input and analysed weekly to inform gaps in programme and future directions. They were also analysed to gather insights and outcomes from the module. The survey included the following questions:

1. *Overall, how would you say tonight went? (Circle one of the smiley faces)*

2. *What was the most interesting/important thing you learned tonight?*
3. *Something you want to learn more about?*
4. *Anything you'd change for next time?*

The first question was converted into a modified 5-point Likert scale (with each smiley face aligning with a possible outcome of 1-5). The Likert scale gathered quantitative data; however, it was not a large enough component of to substantiate classifying the research design as mixed methods. Instead, the descriptive statistics were embedded within the main qualitative methods. The remaining three questions provided an opportunity for youth to

develop their capabilities of reflection and articulation. The second question, *"what was the most interesting/important thing you learned tonight"* was the most informative within this research to determine key outcomes from each empowerment and co-design module. The third and fourth questions provided feedback and considerations for module delivery and facilitation improvements week-to-week.

Mobile-mentaries storytelling, filming and editing using smartphones

Mobile-mentaries derived from a digital narrative photovoice tool developed within the preliminary work of the pilot study (232). In our programme, the mobile-mentaries engaged the youth in a creative process of visual storytelling as they filmed short videos to capture their perspective on the programme. The mobile-mentaries content was also used to make one group video for SWPICS and The Fono groups using the Spark APP with editing assistance from members of the research team. The wider PPYEP used this as a means of dissemination and programme promotion. The mobile-mentaries questions included:

Programme transformation

1. *What does health mean to you?*
2. *How have you developed throughout the programme?*
3. *How has your understanding of leadership changed throughout the programme?*
4. *How are you going to apply and implement what you've learnt from the PPYEP in your life?*

Programme uptake

1. *What did you like the most about the programme?*
2. *What did you find challenging?*
3. *Favourite module? Why?*
4. *How did you find the co-design component?*

Focus group discussions (FGD)

Semi-structured focus group discussions (FGD) were conducted with the youth participants in Tokoroa and Henderson six months after the programme finished. FGD were chosen because they were the most valuable qualitative method in the review. They yield

informative data on normative understandings of, behaviours towards, and beliefs about a particular experience (175) (141) and allow participants to share perspectives that are rooted in the realities of their everyday experiences (184). As Kieffer et al. (2005) have argued, many researchers consider FGD to be a culturally appropriate method of data collection for peoples that value collectivism (233). FGD draw parallels to "talanoa" (234) (235), a Pasifika way of sharing of ideas, or collective discourse that trace back to Tongan, Samoan or Fijian roots. Although the research did not use formal research methodologies of talanoa, the FGD were structured to emulate talanoa processes. The FGD questions included:

Programme impact

1. *What were the most important things you learnt in the programme?*
2. *What did you learn about yourself in the programme?*
3. *What parts of the programme made you feel empowered?*
4. *Has this programme transformed your behaviours or perspectives in everyday life? Give an example.*
5. *Part of the empowerment training was focused on developing you as agents of change in your community because making a positive change in your community is important – in what ways (if any) have you shown to be an agent of change? Give an example.*
6. *How motivated are you to make a change in your community?*
7. *What was it like planning the intervention?*
8. *What did you like about the co-design model and the specific modules? (Gift + Issue = Change, 7 Steps, SMART goals)*

Programme uptake

1. *In what ways (if any) has there been a change in the way things are done in your community?*
2. *What were the barriers to participation in the programme?*
3. *Now that you've had the experience, what would you change for next time?*

The FGD were conducted at the same locations where the programme was delivered in Tokoroa and Henderson. Similar to the programme, healthy snacks and $20 *koha* were provided. They ran for approximately 2 hours and were audiotaped. During the FGD, notes were also taken on any behavioural or interrelation nuances between the youth. As stated by Phillippi & Lauderdale (2018), how participants express themselves, interact, and behave

also provide rich insight into group dynamics, individual transformation, and empowerment outcomes (236).

Key informant interviews

The key informant interviews were conducted with the community research facilitators, as well as the SWPICS and The Fono CEOs. Each interviewee was interviewed face-to-face six months after the programme finished. Each semi-structured interview elicited insight on how the programme went from an operational perspective, as well as recommendations for the future. The interviews lasted between 45 – 60 minutes and were audiotaped. The key informant questions included:

Overall research partnership experience

1. *What was your experience in hosting and facilitating the programme?*
2. *From an organisation perspective, how do you think the programme fits with your organisations' values and vision?*
3. *What important learnings can we gather from this programme to target youth (or any other group) as agents of change in the community?*

Co-design

1. *One objective of the study was to empower youth to utilise the knowledge they gained from this programme and transfer it into actions to prevent prediabetes. This was done by co-designing community interventions. What does co-design mean to you? And did we fulfil your expectations?*
2. *From an organisation perspective, what learnings can you share with running a research intervention with your community? What were the considerations? Would you run another intervention?*

Future direction

1. *There's always room for improvement – what changes/improvements would you recommend to the co-design process, and please elaborate on your reasons for these changes?*
2. *If we were to do it again with you, what strategies are necessary for implementing and embedding this programme in a real-world setting in your community?*

The FGD and the interviews both employed a semi-structured approach. They had a set of pre-determined, specific questions concerning the research objectives to maintain structure

(237); however, they allowed for flexibility and spontaneity. Follow-up questions were asked to gather more depth (238), and questions were reframed if the youth or interviewees did not understand the initial wording (184). They were also built on months of rapport and relationship-building, which established a familiar, conversation dialogue to explore the themes, comments, and topics.

Data analysis

This research conducted four separate analyses as per each research objective:

(i) the conceptualisation of co-design,

(ii) individual module case study,

(iii) programme evaluation, and

(iv) programme uptake considerations.

Analysis (iii) was the primary analysis of this research, and the programme was evaluated as one entity. The analyses and results combine the data from Tokoroa and Henderson. Results specific to each community or a particular programme component were delineated, where applicable. For all analyses, the data from the FGD, the mobile-mentaries, the key informant interviews, and the weekly module evaluations (open-ended questions) underwent thematic analysis. Thematic techniques interpret and organise to identify patterns of meaning relevant to the research questions, particularly for the uptake considerations and how to embed a programme into Pasifika communities (239). Although thematic techniques are the most widely used qualitative method, they were not formalised until 2006 by Braun and Clarke (240) who developed six steps of thematic analysis: (i) familiarising yourself with the data; (ii) generating initial codes; (iii) searching for themes; (iv) reviewing themes; (v) defining and naming themes; and (vi) producing the report (240). Thematic analysis can be either inductive (data-driven) or deductive (synonymously classified as a *"theoretical thematic analysis"*), a researcher-driven method, wherein the themes that emerge from the data are interpreted concerning existing theoretical concepts or frameworks (240).

Thematic analyses do not prescribe methods of data collection nor theoretical positions on epistemological frameworks. They are flexible and can, therefore, analyse a wide range of research questions. They can develop a detailed description of an event (experiential) or

identify concepts and ideas that underpin the explicit meaning of the data (critical) (241). This flexibility was also noted as useful for emerging researchers (i.e. doctoral candidates) to gain foundational skills in qualitative techniques and is particularly relevant in participatory research projects.

For each thematic analysis, the data were first transcribed verbatim and read several times for familiarisation and immersion. The data were input in NVivo QSR (Version 12.2, 2018), a data analysis software. The data were reviewed to generate the initial codes and identify key quotations. Once all data were coded, the codes were reviewed, analysing for relationships, connections, and patterns. The codes were grouped into potential themes. Thematic tables were then created (i.e. visual representation of codes, sub-themes, and themes). These were discussed and refined with the PIs. The themes were then defined and described based on emergent conceptualisations from the data and existing literature. Last, relevant quotes from each data source were selected that best illustrated the identified themes and subthemes.

The following subsections describe each of the four specific analyses conducted for this research. They are presented in the order parallel to the research objectives, noting again that analysis (iii) was the primary analysis for this research.

Analysis (i): Conceptualisation of co-design

Objective I of this research was to develop an original model of co-design and embed it within a youth empowerment programme. The community facilitators and CEO of SWPICS and The Fono were asked the question *"what does co-design mean to you?"* in the key informant interviews after the co-design was completed. These data underwent inductive thematic analysis to determine how the community partners perceived the model co-design

and how it embedded within their organisational structures. The data were visualised in tables based on the emergent themes and sub-themes.

Analysis (ii): Individual module case study

Objective II of this research was to test the programme by partnering with two Pasifika health service providers, adapting the programme to their community structure and cultural provisions, and co-delivering it within their communities. For this analysis, each module was analysed and presented as a specific case study with a focus on capacities developed, module outcomes, and module content, where applicable. The individual modules were presented chronologically, corresponding to the programme's facilitation and delivery. The module case studies underwent inductive thematic analysis to derive key themes from the modules and the empowerment and co-design components.

Analysis (iii): Programme evaluation employing the "5 Pillars of Social Change" framework

Objective III of this research was to evaluate the impact of the entire programme using an original framework of social change. Analysis (iii) was the primary analysis conducted for this research, employing deductive thematic analysis evaluate the programme impacts on the youth, their broader communities, and the community partners using the *"5 Pillars of Social Change"* framework (Table 6).

Table 6: Deductive thematic analysis structure

	Pillar				
	Values	Knowledge	Behavioural	Service sustainability	Socio-political
Level					
Individual					
Group					
Community					

Data visualisations for each theme (i.e. pillar of social change) were developed and presented alongside key quotations. This final phase involved weaving together the analytic narrative and contextualising the findings and extracting the key insights to inform the research discussion.

Analysis (iv): Uptake considerations

Objective IV of this research was to explicate the contextual considerations for programme uptake. An inductive thematic analysis was conducted on the FGD and key informant interview data. Tokoroa and Henderson were analysed separately. The data were visualised in tables based on the emergent themes and sub-themes to determine programme uptake requirements, challenges with participating in the programme, and challenges with the model of co-design from the youth and community partner's perspective. Identifying the barriers and enablers of programme uptake established a strong foundation to understand the limitations and considerations on how to create tangible, realistic, and sustainable change towards healthy lifestyles within different Pasifika community contexts.

A separate descriptive statistical analysis compared the evaluation survey Likert scale scores between Tokoroa and Henderson, determining mean values with +/- standard deviation and variance. These were calculated using Excel amongst all participants.

Maintaining validity and trustworthiness

Qualitative methods are often critiqued because they are not based on the positivist fundamental belief that objective knowledge can be documented (238) and, therefore, cannot be assessed for objectivity or validity in replicable, specific ways (238) (242) (243). Although qualitative inquiry acknowledges subjectivity, it is still important to establish some level of confidence that qualitative research represents the reality of the participants (244) (245) (208) (246) (245), particularly for CBPR interventions (119) (193) (247) (247) (190).

There must be well-established concepts and procedures that allow the researcher to deal with the issue of objectivity (248) (245) and establish rigour in their work (249) (244) (250).

Guba and Lincoln (1989) developed one of the most widely used sets of criteria for assessing the *"trustworthiness"* of qualitative data. They identified four elements: credibility, transferability, dependability, and confirmability (251). Without elaborate detail, these criteria outline how to conduct research that matches the perspectives of the participants, that are detailed enough that they apply to other research contexts (251). Holkup et al. (2004) later added five criteria to this set to embody CBPR principles, including fairness, ontological authenticity, educative authenticity, catalytic authenticity, and tactical authenticity (252). Although these were important readings to inform the approaches taken in this research, how they were actualised was more critical. This research utilised three specific techniques to maintain the validity and trustworthiness of the data: observational field notes, triangulation, and member validation to compare, interpret, and gather meaning from the data.

Observational field notes are widely recommended in qualitative research as a means of documenting contextual information to complement the voice of participants (236) and were recorded throughout the entire research process and programme delivery. They gathered descriptive information of the programme (i.e. time, date, and extenuating circumstances impacting attendance) and discussions during the post-module debrief meeting between the community facilitators to provide complementary contextual information on the programme delivery and outcomes. Although there is no standardised protocol for field note collection, Phillippi & Lauderdale (2018) outlined practical guidelines that guided the field note process that were utilised in this research (236). The field notes were taken each module or immediately after to minimise subjectivity and the risk of excluding details.

Triangulation was also utilised to overcome the inherent biases and challenges of unidimensional qualitative methods. Triangulation is a powerful technique that facilitates validation of data through cross verification from two or more sources (253) (254) (220) (255). This research used a "data transformation triangulation design model" that incorporated three features of triangulation. Data were: (i) collected using multiple techniques and merged during the analyses; (ii) collected at different key points throughout the programme (e.g. before the programme started, after each workshop, and after the entire programme finished); and, (iii) gathered from multiple perspectives (i.e. players in the research including youth, facilitators, SWPICS and The Fono CEOs, and personal observation).

Last, this research employed member validation as another means of enhancing rigour. Member validation empowers the contributors of the data to authenticate and verify the findings (i.e. youth, the community research facilitators, and the community partners), a technique used in qualitative research (208). Immediately after the data analyses, the preliminary results and initial transcripts were presented to the youth participants and the community partners for revision and to provide feedback. This process ensured that the results accurately portrayed their experiences and allowed the participants and community partners to share any missed information. It also prevented false information and observation bias from influencing the results.

Programme development and delivery

This section describes the programme development and delivery.

Programme development

Objective I of this research was to develop a health promotion programme that enables youth to become agents of social change. It involved refining an existing youth empowerment programme created for the pilot study (2016), and integrating within in it an original, youth-based model of co-design. The refinement process was influenced by the seminal finding from the YEP pilot study that the programme necessitated a specific model, method, or process to translate the youth's motivation into community change (14). It was also largely informed by the literature review of youth empowerment programmes and the Social Change Model of Leadership (SCML) (79) (126).

The programme retained the original objectives (these, notably, were distinct from the research objectives outlined in this thesis):

I. **Community-building:** To foster support, trust, and connection, and to enhance and build social capital among participants.
II. **Raising awareness:** To increase knowledge of healthy lifestyles and their barriers and enablers, as well as the social, cultural, environmental, and historical determinants of prediabetes for Pasifika peoples.

III. **Increasing self-esteem:** To improve participants' self-confidence, self-efficacy, and attitude towards personal growth, competence, and leadership potential.

IV. **Motivation:** To spark inspiration and drive for participants to be the catalyst of change within their communities.

V. **Action-planning:** To develop one group community intervention to prevent prediabetes through the proposed process of co-design.

First, the refined programme included more opportunities to develop the youth's healthy lifestyle capacities and capabilities (e.g. practical, healthy lifestyles skills). Second, the programme incorporated a module on the social-cultural history of Pasifika peoples for youth to gain a foundational knowledge of their past and current culture and their implications on health. Third, the programme included a module on mental wellness to deconstruct psychological stress and discuss how mental health influences NCDs, such as prediabetes. Fourth, and particularly crucial within this research, an original model of co-design was embedded within the programme to pragmatically design, deliver, and implement interventions that targeted prediabetes within the communities. The development of the model of co-design was largely informed by the systematic literature review presented within Chapter 2 and input from the community partners. The references were evaluated based on their research objectives, participants, discipline, programme methods, and their implications for this research (144) (151) (152) (153) (154) (142) (143) (144) (145) (146) (147) (147) (148) (149). The preliminary model was then revised and refined with the PI and researchers on the larger PPYEP. Collaboratively, it was determined how to embed the co-design modules within the empowerment programme.

The refined programme contained two parts, referred to as *"Part I: Empowerment component"* and *"Part II: Model of co-design"* (Figure 9).

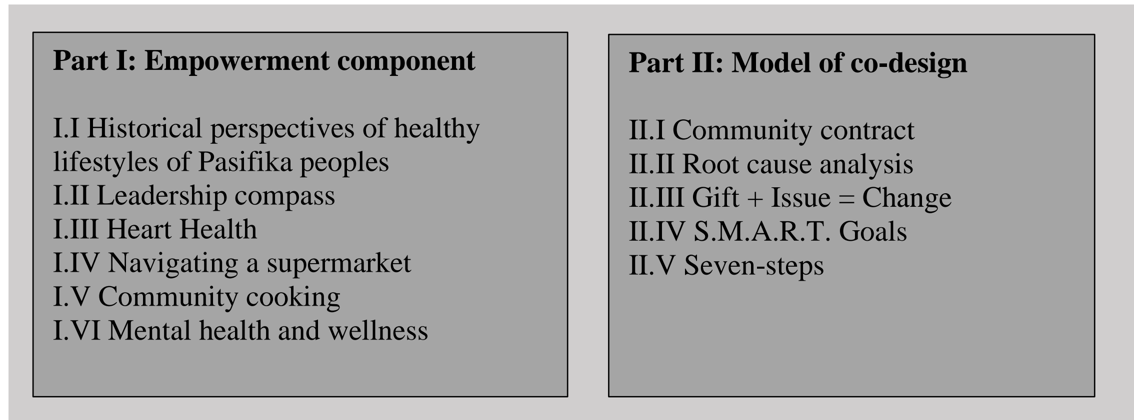


Figure 9: The tested programme module list

Part I, the empowerment modules, enhanced the leadership and healthy lifestyle capacities and capabilities of the youth and followed a consistent format: an experiential activity followed by a facilitated discussion to interpret meaning from the module. They focused on building youth's confidence, self-esteem, and leadership skills; developing practical skills of healthy lifestyles (e.g. budgeting and cooking); and deepening the youth's knowledge of the determinants of prediabetes for Pasifika peoples.

Part II, the model of co-design, was comprised of a set of original modules developed within this doctorate to provide a pragmatic, practical application of co-design theory. The model was used to co-design, refine, and implement community change projects towards healthier lifestyles and prediabetes prevention. It included five modules to build a collaborative, safe space between all participants, identify issues they wanted to affect, and ideating and refining community intervention action plans. The modules from each "component" were interwoven to create one

coherent programme. Table 7 briefly describes the objectives of each module. Appendix I contains a full description of each module.

Table 7: Programme module order and description

Order	Module name	Module objectives
1	Co-design module I: Community contract	• To outline the goals and challenges of the programme • To and outline group values and vision
2	Empowerment module I: Historical perspectives of healthy lifestyles for Pasifika peoples	• To develop a knowledge base of Pasifika healthy lifestyles from social, cultural, generational, and historical contexts
3	Empowerment module II: Leadership compass	• To identify personal leadership styles and how to build effective teams
4	Empowerment module III: Heart Health	• To develop capabilities of measuring and interpreting blood pressure and how heart health connects to NCDs
5	Empowerment module IV: Navigating a supermarket	• To explore and compare the costs of foods for different socioeconomic realities of Pasifika families and learn how to eat healthily on a budget
6	Empowerment module V: Community cooking	• To cook and prepare a meal using healthy ingredients
7	Empowerment module VI: Mental health and wellness	• To introduce the Pasifika Fonofale model of health (61) and develop strong mental health
8	Co-design module II: Root-cause analysis	• To brainstorm the systematic causes, supporting problems and visible impacts of prediabetes specific to Pasifika people
9	Co-design module III: Gift + Issue = Change	• To brainstorm community interventions ideas and personal skillsets to contribute to social change
10	Co-design module IV: S.M.A.R.T. Goals	• To refine the ideas using the S.M.A.R.T. Goals framework (256) (specific, measurable, attainable, relevant, time-bound)
11	Co-design module V: Seven-steps	• To develop community intervention implementation roadmaps ideas using the following seven steps: roles, responsibilities, allies, resources, challenges, possible solutions, timeline

Programme delivery

The programme was co-delivered by two research assistants and the community research facilitators in each community from May- October in 2018. The community research facilitator participated in a two-day facilitation training that covered content on youth empowerment theory, social change, and leadership development as well as practical facilitation tools for working with youth. All SWPICS and The Fono staff were invited to the training for relationship-building and professional development.

For the programme delivery, each group in Tokoroa and Henderson met once a week for two hours in the evening. In Tokoroa, the group met at the SWPICS health centre, and in Henderson, the youth met at The Fono health centre. Both locations were familiar and often, where the youth and their families received primary health care and services. Neither group met during school holidays, nor if there was a conflict in the community (i.e. a school performance or community funeral). Food and drinks were provided at each session as well as *me'alofa* (Pasifika acknowledgement of participation), a $20 Countdown voucher as a cultural protocol of reciprocity. The community research facilitators communicated with participants weekly through email and texting as a reminder of upcoming sessions.

The programme delivery phase also included weekly meetings with the community research facilitators to debrief each module and extract important outcomes, feedback, and adaptations for the future. The meetings served as a space to adapt the proceeding module to account for scheduling conflicts and ensure that the content was relevant for the youth and community contexts.

Chapter summary and conclusions

This research employed a CBPR methodology. It took a pragmatist approach to understand reality, ascertaining that knowledge is the most meaningful when it has practical applications. The study used a multi-method qualitative approach and conducted thematic analyses on data from weekly module evaluation surveys, mobile-mentaries, FGD, and key informant interviews. It conducted four separate analyses, as per each research objective.

The programme tested within this research was based on the pilot YEP and contained several modifications to equip Pasifika youth to become agents of social change within their communities. It included an empowerment component to build youth's healthy lifestyles and leadership capacities and an original model of co-design to develop prediabetes prevention strategies in a community-specific, culturally relevant way. The programme was delivered over five months from May- October 2018. It contained weekly opportunities to tailor the programme to fit the context of Tokoroa and Henderson based on community and youth input. The programme delivery phase also included the bulk of the data collection and, ultimately, established the basis for the rest of the research within this thesis. Table 8 presents an overview of the research design per research objective.

Table 8: Research design summary

Research objective	Analysis (where applicable)	Description
I: To develop a prediabetes health promotion programme that supports youth to become agents of social change by refining an existing youth empowerment programme and integrating within it, an original youth-based model of co-design.	Analysis (i) Conceptualisation of co-design	• Modified the pilot YEP modules • Developed an original model of co-design • Conducted inductive thematic analysis
II: To co-deliver the programme with two Pasifika health service partners, adapting the programme to their community structure and cultural provisions.	Analysis (ii): Individual module case study	• Established research partnerships with two Pasifika community partners • Trained community research facilitators and conducted participant recruitment • Facilitated the programme modules and co-designed prediabetes community interventions • Conducted weekly module evaluation surveys • Gathered mobile-mentaries data • Compiled a case study analysis of each module
III: To develop and implement an original framework of social change to evaluate the impact of the programme.	Analysis (iii): Programme evaluation employing the *"5 Pillars of Social Change"* framework	• Developed the *"5 Pillars of Social Change"* framework of evaluation • Conducted FGD and key informant interviews • Conducted deductive thematic analysis
IV: To explicate the contextual considerations for programme uptake.	Analysis (iv): Uptake considerations	• Conducted inductive thematic analysis • Analysed programme satisfaction Likert scores

Chapter 4: Results

Chapter 4 presents the results of the four analyses as per each research objective. The results are ordered by analysis: (i) conceptualisation of co-design, (ii) individual module case study, (iii) programme evaluation using the *"5 Pillars of Social Change"* framework, and (iv) programme uptake. Since analysis (iii) is the primary analysis of the programme, it comprises the largest section of this chapter.

Analysis (i): Conceptualisation of co-design

The following section describes how the community health service patterns conceptualised co-design. During the key informant interviews, the community facilitators, and CEOs of SWPICS and The Fono were asked the question *"what does co-design mean to you?"* Three themes emerged in the inductive thematic analysis:

(i) co-design as a value-based process,

(ii) collective decision-making, and

(iii) empowerment.

Theme 1: Co-design as a value-based process

The process of co-design was value-based, where the community intervention development was guided by the values of the youth and community organisations:

> *"The whole co-design process for me, because I have become quite an expert in the whole co-design process in this community, is really starting from the ground up, from our values. It is being quite authentic to who I am, and it is quite organic: where I come*

from and how all of those things can help to shape some amazing change.” (SWPICS CEO)

The SWPICS CEO remarked that the model required a mindset shift from her organisation to trust that they were valued within the process, differing from their previous experience in co-design research. She continued to that this model was the best fit for conducting effective work in community health:

> *“It has been a significant mindset shift because we have been conditioned to be “done to” not “done with”- and so this has been a change ourselves to accept that kind of approach. It’s the best fit for this space.”* (SWPICS CEO)

Theme 2: Collective decision-making

The process of co-design involved collective decision-making and coming to an agreed-upon vision for the community interventions. This model was a highly collaborative process, where each player had equal footing, engagement, and influence:

> *“Co-design is agreeing on what the vision is of something and then having people, the “key partners” at the table with equal footing to have a conversation about ‘how we are going to do this’ and create a safe environment, and supports them to be able to, to truly and fully give their opinions and views around how we could do things. You know there is a good saying within Māori that ‘you bring your basket of knowledge and I’ll bring mine and together we could look after our people better.’ It is that.”* (The Fono CEO)

This model allowed for knowledge exchange and invited all stakeholders to share their perspectives and diverse contexts:

> *"I am able to share, from my perspective. I have all this knowledge, all of this learning, and I am able to transfer that into whatever setting. That's what co-design means for me, and that's how I have been able to implement and engage it."* (SWPICS CEO)

Theme 3: Empowerment

The last theme that emerged was empowerment. This model provided an empowering process for both the health service partners and the youth. The community leaders claimed that it was empowering to be invited to the conversation of how to better their communities:

> *"I think the co-design stuff is empowering. Part of the whole empowerment process has the opportunity to be at the table… it is a positive thing, you know? When you are invited to say, 'we are here to co-design everything as one, these are the things here… let's think about it' It's empowering to be given that opportunity on its own."* (The Fono CEO)

The community partners recognised that this co-design process engaged the youth in empowering ways. It enabled the youth to translate their skills and envision how they can utilise their strengths to contribute to the community interventions:

> *"The youth realised how they could use their strengths to have a positive impact. They liked learning about other youth leaders and thinking about what they can do to*

implement healthy living in their community… thinking of a holistic action plan."

(SWPICS Community research facilitator)

Analysis (ii): Individual module case study

The following section presents the themes from the inductive thematic analysis of the module case studies. The full individual module case study analyses are presented in a tabular format in Appendix II. Each includes key outcomes, supporting youth quotations from the evaluation survey responses, and, where applicable, content from the module or differences between Henderson and Tokoroa. This section presents key outcomes derived from the analysis for the empowerment and co-design components separately. Each module is presented under the main outcome it achieved in chronological order. Together, these analyses yielding information on how social change developed throughout the programme and how the two components synergised to empower youth into agents of social change.

Part I: Empowerment component

Overall, the empowerment component modules achieved three outcomes: increasing knowledge about healthy lifestyles, building social change and leadership capacity, and developing healthy lifestyles capacities and capabilities.

Theme 1: Increasing knowledge about healthy lifestyles

The **Historical perspectives of healthy lifestyles** module ensured that the participants learned about the biomedical definition of prediabetes and how it is a precursor to diabetes, a more serious, long-term NCD. The module instilled the perspective taken throughout the entire programme, that prediabetes is a socio-cultural-environmental issue, and that *"diabetes comes from things other than us,"* following Egger and Swinburn's definition of obesity (44) as well as other social and cultural determinants of health theories (64) (67). By describing obesity as: "*a normal response to an abnormal environment* (257)*,"* youth explored the past and present health environments for Pasifika people and deepened their critical thinking skills as they conceptualised and contemplated the health realities of their communities. It set an essential foundation to explore the more complex social, historical, environmental, and cultural determinants in the later modules. The youth also acknowledged that prediabetes disproportionately affects Pasifika peoples. They learned that the high prevalence of prediabetes is predicted to increase in New Zealand (34) and worldwide (53). They corroborated that prediabetes was a critical issue to affect their communities positively; however, that lifestyle modification has a complicated past and future for Pasifika peoples in New Zealand.

The second area of increasing knowledge pertained to the youth's deepened understanding of mental health and wellness. The **Deconstructing mental health and wellness** module provided

an opportunity to explore Pasifika-specific conceptualisations of health and introduced The Fonofale model. It aligned with the Mental Health Foundation of New Zealand's guidelines for effective youth mental health promotion programmes (258) and other youth mental health programmes including goal setting, decision making, skills-building (259) (260), and developing confidence, identity, sense of self-worth, and connectedness to peers (261) (262) (258) (263). The participants also increased resiliency as they acknowledged their individual competencies and brainstormed tangible, implementable strategies to improve their mental health, upholding principles of skills-based mental health promotion strategies. Increasing knowledge linked to the second outcome of the empowerment modules, developing healthy lifestyle capacities and capabilities.

Theme 2: Developing health lifestyle capacities and capabilities

The **Heart health** module provided a tangible means of health capacity development in cardiovascular health. Youth were able to understand complex terminology, ask questions, and enjoyed using medical equipment; it was novel and exciting for them. Familiarising the youth with biomedical terminology encouraged them to take this knowledge and help their families interpret their blood pressure results too and utilise this discourse throughout the programme.

The **Navigating a supermarket** module developed the youth's healthy lifestyle capacities of budgeting for a healthy diet while accounting for different financial circumstances. The module provided an opportunity to learn about budgeting and translate this knowledge into positive, healthy lifestyle behaviours. The module forced the youth to experience the challenging financial realities Pasifika families experience, often representing the financial situations of the youth participants. The youth acknowledged that socioeconomic deprivation forces families to

make harsh compromises, often between food and household products that they consider necessities. The youth drew parallels between food choices and the disproportional burden of health issues for Pasifika peoples, aligning to the Social Determinants of Health model (264) and the current status of Pasifika health (67). More than discussion, the module developed the practical, healthy lifestyles capacity of the youth: how to stick within a budget and eat healthily.

During the **Community cooking** module, the youth gained practical cooking skills to make a healthy, tasty meal from unfamiliar ingredients (i.e. plant-based). It built upon content from the previous budgeting module as they realised the price savings of cooking at home as opposed to buying takeaway food. The youth also discussed barriers to cooking amongst their families. The module encouraged the youth to reconceive and re-evaluate their perception of cooking from a time-demanding, arduous task to a skillset they can master. This module also emphasised the relational aspects of food and the positive socialisation that occurs when people sit at a dinner table together. Youth discussed that their families eat together less during the week because of busyness, shift work, and difficulty in coordinating meals for large families; however, that people should prioritise mealtimes. As youth discussed ways of making more affordable, time-saving meals, and the importance of prioritising eating meals with their families, they translated increased food literacy into action.

Theme 3: Building social change and leadership capacity

During the **Leadership compass** module, the youth participants broadened their conceptualisation of leadership to consider leadership a process rather than a position, aligning to the Social Change Model of Leadership (SCML) development approach (79). They identified eight values that synergised with the SCML and the Pasifika cultural value of collectivism,

including teamwork, inclusivity, honesty, love, humility, integrity, commitment, and initiative. This module was facilitated near the beginning of the programme, and establishing these values encouraged collaboration and youth incorporated leadership discourse into the future modules and debrief discussions. Importantly, the leadership compass module did not oversimplify, nor embellish the difficulties of leadership and working with others. The youth also discussed the weaknesses of each leadership style and appreciated that by acknowledging and naming these weaknesses, they felt like they could improve upon them and adapt to different situations. By demonstrating that leadership styles are situational, and that people modify their styles according to the context and environment, youth engaged in a rich discussion on how to foster situations that enhance strengths for each leadership group. Youth contemplated the effectiveness of creating teams with a diverse variety of leadership competencies from other styles. Interestingly, many youth self-identified with the *"Nurturer"* leadership style, aligning with the leadership group percentages of the pilot study (14). Nurturer leaders exemplify Pasifika values of collaboration, shared decision-making, and service to others. The youth also built practical leadership skills through the activity-based component and connected the leadership compass model to real-life situations.

Part II: Model of co-design

Overall, the model of co-design modules achieved three outcomes: building a safe space, harnessing youth's insight into community change, and providing a practical tool for refining the community interventions.

Theme 1: Building a safe space

The **Community contract** module laid the foundation for collaboration and developed a safe space amongst each group. This research complements the United Nations description that safe spaces are inclusive environments that promote civil discourse and ensure that young people feel respected as they learn to express themselves and contribute to society (265). The module substantiated that for co-design to occur, all stakeholders must identify a relational foundation in which to operate—involving the youth in creating the vision for their own safe space, encouraging self-determination, building connection, and increasing engagement. The module also demonstrated that it was important for youth to have space to express their concerns with participating in the programme safely. The youth realised that their peers shared many of their fears, and they ideated ways to support each other throughout the programme. They created a "contract" of individual and group values to refer to and uphold throughout the programme (Figure 10).

Determination
Belief Trust
Encouragement
Listening Support Involvement
Honesty Respect Kindness
Acknowledgement
Consideration

Figure 10: Community contract values

Theme 2: Harnessing youth's insight into community change

The **Root cause analysis** module encouraged the youth to be social determinants of health experts as they identified the underlying causes of prediabetes specific to their communities. It required the participants to build upon their knowledge of Pasifika health acquired within the empowerment component of the programme and synthesise it with their personal views and experiences. The youth identified that, from their lens, environmental, social, and cultural, mental health, and lack of knowledge were the key determinants of health for Pasifika peoples. Each is defined, based on their perspective and module content:

> <u>Environmental determinants of health:</u> youth emphasised the lack of access to healthy foods as well as the structural obesogenic food environments that contribute to poor nutrition and physical inactivity.
>
> <u>Social determinants of health</u>*:* youth identified that poverty, socioeconomic status, financial freedom (conceptualised as one's ability to exercise autonomy) and employment stress were root causes of prediabetes in their communities.

Lack of knowledge: youth emphasised that Pasifika peoples have less access to knowledge about healthy lifestyles. Lack of access was particularly relevant in Tokoroa, stemming from rurality and lesser available health information and services.

Mental health: youth identified that depression, anxiety, psychological and emotional stress, lack of support and low self-esteem were each *"root causes"* that perpetuate health issues and visible symptoms of prediabetes. Youth linked this to the Fonofale model of health and how wellness is more than physical health.

Cultural influences -Traditional Pasifika culture and acculturation: The youth claimed that there was a complicated socio-cultural influence of Pasifika tradition on prediabetes. Many youth associated "Island food" with wellbeing and a meaningful way to connect to their culture. The Henderson youth indicated that westernised societal norms also contributed to new cultural norms that contribute to high prediabetes prevalence.

Within this module, the youth participants also began to consider how to positively and systematically influence the underlying causes of prediabetes. It was the first module in the programme where the youth began to think about knowledge translation. The module encouraged rich dialogical opportunities for youth to share their insights and concerns about affecting change. They were encouraged to consider the systems that perpetuate health inequalities and broaden the scope of their community intervention ideas to underlying root causes as opposed to the symptoms of prediabetes.

The **Gift + Issue = Change** module continued to harness the youth's insight into social change skills and encouraged youth to originate new prototypes for their group's community

intervention. The module took a strength-based approach to utilise their capacities and competencies and motivated them to be creative as they envisioned how to affect positive change. They developed seven different preliminary community intervention ideas, demonstrating that they have unique perspectives and brought a different set of skills, interests, and experiences to the group. During the module, the youth ideated seven preliminary intervention plans (Table 9).

Table 9: Gift + Issue = Change module community intervention ideas

Preliminary community intervention idea	**"Gifts"**	**"Issue"**	**"Change"**
Running a healthy food store featuring health promotion material	Branding skills Communication	Lack of healthy lifestyles education Inaccessible knowledge of prediabetes prevention	Increasing awareness of healthy lifestyles and prediabetes prevention
Organising a sports day for people aged 20-40 with different cultural sports	Athletics Organisation Community capital Strong Pasifika cultural identity	Physical inactivity in adults Lack of opportunity for sport	Increased physical activity
Community cooking workshops and community events	Cooking skills Passion for food Pasifika culture	Unhealthy food served at community events and feasts Low food literacy skills	Healthier diets and learned cooking skills Redefining norms at Pasifika community events
Making innovating health promotion material	Marketing	Lack of healthy lifestyles education Inaccessible knowledge of prediabetes prevention	Increasing awareness of healthy lifestyles and prediabetes prevention
Organise and *Amazing Race, p*rediabetes prevention edition	Organising games and events	Inaccessible information on prediabetes prevention	Increasing awareness of healthy lifestyles

Facilitating the PPYEP with a new cohort of participants	Facilitation Youth empowerment programming Leadership	Lack of motivation to make change Opportunity to be involved in prediabetes prevention Lack of continued services	Supporting service organisations and programmes Increase the capacity and capabilities of participants
Organising a step-count challenge	Community organising Sports	Physical inactivity in adults	Increased physical activity

The Gift + Issue = Change was the most pivotal module of the entire programme and, therefore, is elaborated on as a separate entity within the discussion chapter.

Theme 3: Practical tool for refining the community interventions

The **S.M.A.R.T. Goals** module refinement process maintained the youth's original vision of what a comprises a healthy community and developed specific strategies to achieve them. It helped the youth think about how to make their interventions work and what goes into making a sound, effective plan. The M (measurability), was particularly crucial for the evaluation of the community interventions and empowering the youth to be young researchers.

The **Seven-steps** module provided a practical how to implement the community interventions. It continued the strengths-based approach of co-design to capitalise on community resources and allies and outlined a roadmap for implementation. It also provided an opportunity for the health service providers to make suggestions on how to make the interventions culturally relevant. The *"aims," "resources" "roles,"* and *"challenges"* were the most practical steps for developing community intervention. Aims focused on the direction of the interventions and connected them to the key issues the youth strived to affect; resources identified and utilised social capital in Tokoroa and Henderson; roles empowered the youth to hold meaningful positions within the intervention development and

implementation phases; and challenges demonstrated that within the co-design model (and by extension, goal-setting and social change), there would be obstacles; however, these are not insurmountable and in thoughtful co-design processes, can be predicted, planned for, and adapted.

Presenting the community interventions

This section briefly describes the final community interventions that were co-designed by the Tokoroa and Henderson groups. Both groups had similar interventions that targeted working age Pasifika adults (aged 25-44 years) to increase physical activity (measured by daily step counts) and increase health literacy. The Tokoroa youth organised weekly walking groups, and the Henderson group organised a weekly Zumba class. Both groups prepared and facilitated weekly health education lessons (Table 10).

Table 10: Co-designed community intervention description

8-week intervention programme • Weekly exercise health promotion sessions. • Participants seek to reach physical activity goal (accumulating at least 10,000 steps per day starting from 3,000 steps) and incorporate health promotion tools into their lifestyles.
Target group: • 25-44 years old. • Pasifika ethnicity (Pasifika ethnicity self-identified as being the predominant group); • At risk of developing prediabetes, defined by being overweight or obese; participate in little or no physical activity; have a parent or sibling with T2DM; have high blood pressure; may have had a history of cardiovascular problems and/or polycystic ovarian syndrome and/or high cholesterol levels; have been diagnosed with prediabetes on a previous test (266).
Weekly meetings and group fitness classes held at a local community hall
Health education theme cards:
a) What is prediabetes?
b) Diet – water vs fizzy drinks.
c) Diet – home cooking vs eating out.
d) Diet – de-mystifying the ideas on carbohydrates.
e) Physical activity – 30 minutes at various levels.
f) Sleep – the importance of sleep.
g) Weight management – avoiding ‘fad diets.’
h) Heart health – understanding high/low blood pressure.

Both groups used a convenient sampling strategy, including snowballing, to recruit participants. The youth were actively involved throughout the entire process of the intervention implementation. They led operational and logistics of the interventions according to their roles and responsibilities delegations from the *Seven-steps* module. The roles included event management and organisation, participant engagement and communication, and preparing and facilitating the health promotion educational sessions. The youth also conducted the bulk of data collection for the intervention. They measured and recorded the participants' baseline measurements of weight, height, hip, and blood pressure. The community interventions are presented in a separate publication by the PI and other co-investigators that is currently under peer review.

Analysis (iii): Programme evaluation

The following section presents the programme evaluation results, illuminating how the youth transformed into agents of change throughout the empowerment and co-design processes. It presents the qualitative results from the deductive thematic analysis of data from the youth FGD and mobile-mentaries as well as the one-to-one interviews with the health service providers and community research facilitators. The analysis employed the *"5 Pillars of Social Change"* framework of evaluation. Table 11 presents the themes, sub-themes, and level of social change by each of the five pillars and the following sections present the results within each pillar. Each pillar section contains a figure that summarises the themes and describes them using pertinent quotations from the data.

Table 11: Deductive thematic analysis results using the "5 Pillars of Social Change" framework

Pillar	Theme (s)	Subtheme (s)	Level (s)
Values	Cultural identity	Strengthening Pasifika culture	Individual Group Community
	Self-efficacy	Motivation Self-confidence	Individual
	Relationships	Connection Support	Individual Group
	Collectivism	Empathy Responsibility	Community
Knowledge	Health literacy	Prediabetes knowledge Conceptualisation of health Cultural, environmental, social determinants of health Food literacy	Individual
	Conceptualisation of leadership	-	Individual
	Intellectual skills	Analysing Critical thinking	Individual
	Self-awareness	Self-esteem	Individual
Behaviours	Community mobilisation	Community engagement Knowledge translation	Individual Group Community
	Leadership skills	Communication skills Initiative Open-mindedness	Individual Group
	Design-thinking skills	-	Individual
	Healthy lifestyles capacities	Food agency Mental health strategies	Individual
Service sustainability	Health service provider relationship	Partnership Collective decision-making	Group
	Increased capacity to engage with youth	-	Group
Socio-political change	Reconstructing Pasifika cultural norms	Conceptualisation of health De-stigmatisation of mental health Youth leadership	Individual Group Community

Values pillar

The values pillar contained themes of cultural identity, self-efficacy, relationships, and collectivism (Figure 11).

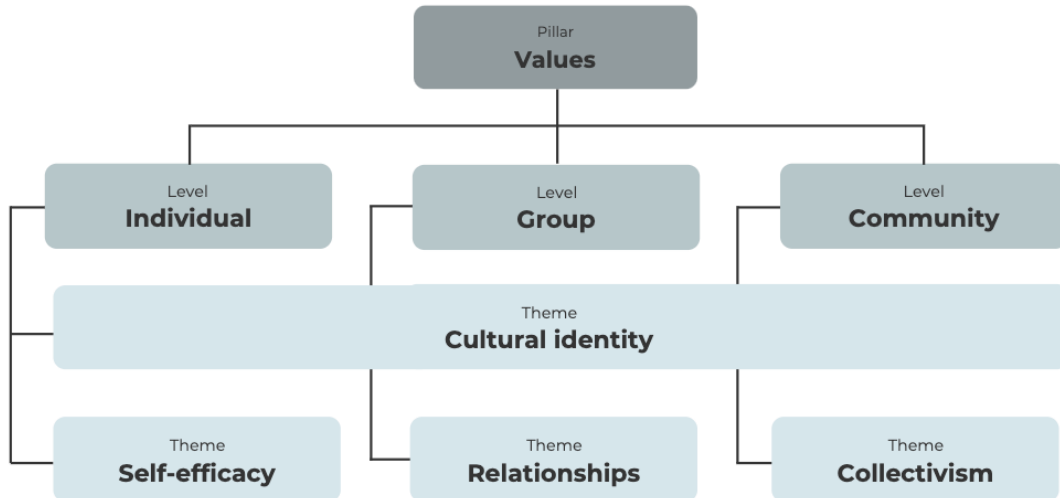


Figure 11: Values pillar programme evaluation themes

Theme 1: Cultural identity

Cultural identity included the sub-theme of Pasifika culture and spanned individual, group, and community levels of social change. It encompassed the strengthening of Pasifika cultural values and the youth's deepening cultural identity. As one youth stated, the programme facilitated a greater appreciation for their Pasifika culture: *"it [the programme] just helped us to really love and respect our cultures."* Aspects of Pasifika culture were interwoven throughout the programme, including music, dance, and language. The programme also encouraged the youth to participate in their wider Pasifika communities, particularly through engaging with their families and churches.

Pasifika culture was an important element of the programme for the community partners, as it upheld the values and vision of their organisations. The SWPICS CEO stated that if the programme was going to be delivered in her community, it must abide by the provisions of Pasifika culture:

> *"There has to be good leadership at both sides and really strong and culturally aware leadership both from the research arm as well as us the community. If it is going to be with this organisation, it has to be Pasifika."* (SWPICS CEO)

Theme 2: Self-efficacy

Self-efficacy included sub-themes of motivation and self-confidence, affecting the individual level of social change. Self-efficacy encompassed one's belief in their capacity to change their behaviours and contribute meaningfully to their communities. The youth noted that after the programme, they felt more self-aware and confident in themselves: *"[the programme] helped us just being confident in yourself... more knowledge of yourself."* The youth described that the programme helped them learn the value of what they can contribute to a group: *"I appreciated the value of my voice."* It also enabled them to expand upon their capabilities and utilise these to make a change (Excerpt 1).

Excerpt (1): Tokoroa Focus Group Discussion:

Facilitator	So my final set of questions are around planning the intervention. Which modules did you like the most from the co-design model?
Youth 1	For me it was the formula one.
Several youth	Yeah.
Youth 2	This gifts one.
Youth 1	Because when you put in the gift change stuff… you know we are capable of doing… you know what we are capable of and so you know how we can solve it.
Youth 3	And in what kind of way.
Youth 4	And how we can all work together. To make change.
Youth 5	Yeah, utilising our talents.
Youth 6	And skills and qualities.

The sub-theme, motivation, emerged as the youth felt more inspired to help their community, and to stand up for what they believe in:

> *"I think that this programme just encourages our youth to take a stand for things in our community. I see that yeah, every week the commitment that each member puts into this programme is just a reflection of them being leaders within their church and communities."*

The youth were also motivated by the notion that the programme allowed them to envision ways to address health issues in their community:

> *"It was cool to have my own opinion and then be able to hear about their ways and then combine them together and come up with an idea to say, 'this is what we are going to do to stop [people] from getting prediabetes.'"*

The Fono CEO stated that the programme laid an enduring foundation of self-efficacy for the youth's engagement in social change and that they are assured that the youth will be influenced by the values developed within this programme later in life:

> *"You know, our future looks even brighter because we have this grouping of really impassioned, keen, and still young and youthful in outlook. It may not come to them in 5 years, but at some point, in their lives, they are going to recall that 'no, this is the way we are meant to do it.' Because of the really strong foundational base of values and a vision."* (The Fono CEO).

Theme 3: Relationships

Relationships included sub-themes of connection and support at the group level of social change. The youth claimed that building relationships with each other was a highlight of the entire programme (Excerpt 2).

Excerpt (2): Henderson Focus Group Discussion:

Facilitator	So what was your favourite part of the programme?
Youth 1	What I looked forward to, was seeing everyone again. I really like the bond that we created, but also just journeying with everyone.
Several youth	Yeah.
Youth 2	What I liked most about the PPYEP programme is getting to see everyone every week because they are all nice and friendly and I like talking to them.
Youth 3	I liked the most that we met new people. That's a good thing. You get to know them. And then they sort of help and support you as we go.

Relationships evolved throughout the programme and established a supportive learning environment for the youth the participate in the modules:

> *"Well, at the start, I found that talking to other people was challenging because it was really awkward, but then as the weeks went by, we got closer and closer. I like coming to the diabetes programme because I enjoy talking to everyone and doing it together."*

Relationships also supported the momentum for youth to work together to make a meaningful change in their communities. One youth remarked that building a connection with others, and intentionally deciding to help, was essential to think about how to prevent prediabetes:

> *"Building a connection with others and actually like deciding to help.... especially because I was able to talk to them about the same topic and understand their point of view about how to prevent prediabetes."*

The SWPICS CEO claimed that the relationships the youth developed throughout the programme laid a strong foundation for their continual involvement in health promotion:

> *"And just the whole bond of friendship and relationship that has developed through the programme- it holds them much more in good standing for the future than anything else that I believe that could have happened within the community to continue a legacy of health."* (SWPICS CEO)

Theme 4: Collectivism

Collectivism included sub-themes of empathy and responsibility and occurred at the community level of social change. Collectivism included the youth working together to

achieve the common goal of affecting change in their communities: *"It [the programme] makes you want to support other people to do the same thing, master being healthy."* The programme inspired a culture of caring amongst the youth and attitudinal shifts to support the community. One youth succinctly stated that: *"I don't know how to put it... an attitude change. It's more common to care."*

The programme also motivated the youth to assume more responsibility for the collective wellbeing of their communities. They appreciated the importance of being positive role models for their peers as they influenced their schools and churches:

> *"Yeah, even with school... we had to be different. We had to go on our own to set a good example. Because everyone will just follow each other, so we had to be different people. And then people think 'I want to be like that.'"*

Collectivism also encompassed the engagement of the community partners as. The SWPICS CEO illustrated that the value of collectivism embodied how each health service organisations aspired to support their youth and wider community:

> *"... in the context of this organisation, the word care is actually a verb. It's an action. It's a doing word. It is not, 'I'm saying to you, [insert name], I care for you.' We want to see the action. Those sorts of values have come out from the youth and the young people as well."* (SWPICS CEO)

Knowledge pillar

The knowledge pillar included themes of health literacy, intellectual skills, the conceptualisation of leadership, and self-awareness (Figure 12).

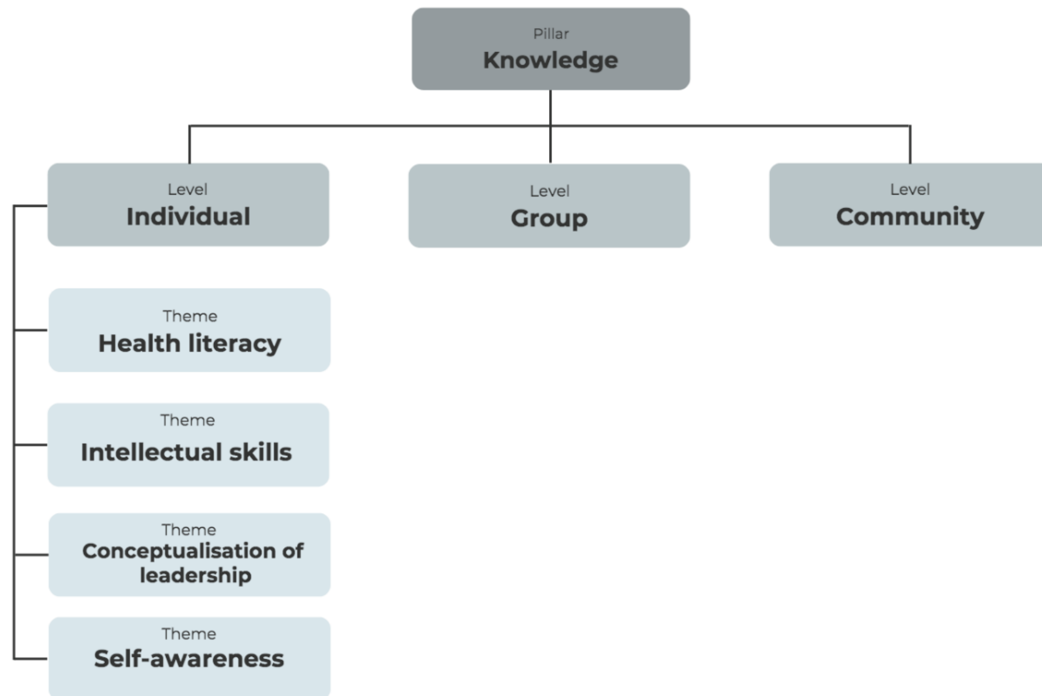


Figure 12: Knowledge pillar programme evaluation themes

Theme 1: Health literacy

Health literacy was a major theme from the programme that occurred at the individual level of social change. It encapsulated the sub-themes of the conceptualisation of health, the cultural, environmental, and social determinants of health, food literacy, and prediabetes knowledge. First, the youth participants learned about the biomedical definition of prediabetes and the difference between prediabetes, type 1 diabetes, and T2DM. They also learned about the broader aetiology of prediabetes and how to prevent it:

"I was able to learn about prediabetes and the whole story rather than just saying 'that's prediabetes, and it's what leads to diabetes.' It taught me that it's avoidable and how to prevent it."

The youth broadened their understanding of health to incorporate healthy lifestyles and wellbeing holistically, aligning to the Fonofale model of health. Youth defined health as knowing oneself and prioritising their wellbeing. They elaborated that health includes the following components:

"Where I am from,"

"Taking care of your [my] body,"

"Eating the right food," and

"Having time for yourself."

Health literacy and the conceptualisation of health also encapsulated the healthy lifestyle capacities and capabilities that the youth developed throughout the programme. It incorporated knowledge of how to sustain healthy lifestyle behaviour, particularly concerning physical activity and diet:

"I also learned that for physical activity, you could have fun, not just having a hard time to try to lose weight… you can put on some music and start moving around and to enjoy physical activity."

The youth increased their food literacy as they learned about diet and nutrition and practical capacities and capabilities to eat healthily. They developed basic cooking and budgeting skills, learning that it is feasible to eat healthily while accounting for different

socioeconomic realities. The programme made the youth think more deeply about where their food comes from and the wider implications of their food choices:

> *"[the programme] was a bit of a wakeup call for people to think about the sourcing of our food and where things came from specifically and how it impacts our health and by reading and understanding more about the nutrition labels of products, I learned how foods from other countries affect our environment."*

The youth also expanded their health literacy as they discussed the cultural, environmental, and social determinants of health and gained a deeper understanding of why health issues exist for Pasifika peoples. As exhibited in Excerpt (3), the youth participants identified that traditional Pasifika culture, access to unhealthy food options, family influences, and affordability are major determinants of health in their communities.

Excerpt (3): Tokoroa Focus Group Discussion

Facilitator	What parts of your surroundings shape your health?
Youth 1	My upbringing. Like. Just the foods I was given and um traditional foods.
Several youth	Yeah.
Youth 1	I think because we are Pacific people. Stereotypical thoughts thinking- a Pasifika person is just not skinny. They are just obese. If we get skinny, it is abnormal to us.
Youth 2	All of the non-healthy takeaways shops are like all next to each other and you can like walk...you can just walk to it. And then all of the healthy ones are all the way out there. Like Subway's all the way out there. Pita Pit is right next to Pizza Hutt and across the road from school…Very convenient.
Youth 3	The prices of the foods.
Youth 4	Eating junk food and eating fat food.
Facilitator	So, what why do people eat junk food and fat food?
Youth 4	So I would have to say my family because we were brought up that you are not allowed to waste any food. Even it is was a mountain. You can't leave the table until it is finished. We were taught not to waste food.
Youth 5	Yeah, for me family is a big one because we live with our family 24/7, therefore, we eat the same food and it depends on what our parents put on the table and it depends if they care about our health or not. And so. This is a big impact because it all depends what parents think, or what they care about and if they don't care about their health, their children can be affected by unhealthy lifestyle.
Youth 6	Yeah, and not knowing where to get the right foods. Especially in our town, for example, we have a lot of fast-food restaurants and takeaways, and you barely see any shops that sell full time sandwiches, like drinks that are… what are they called? Nutrition drinks. You don't really see those in our town. Which is why people probably tend to go for more fatty foods because they are more convenient, and they see them more often.
Youth 7	I also think that its money. I think the supermarkets, and the takeaways and Macers and stuff. Cause you go to the supermarket and its $10 for a tomato. And people are like 'I can't be bothered with that' so they go to Macers and it's like $10 for a full meal. I know.
Youth 8	Well, for me, cost is a big one because healthy food is really expensive. And so, it will be a struggle for most people form big families to buy healthy food for everyone. Um. Also. Um. Takeaways and fast food is easier to get because all you have to do is just go and buy it and it's ready. And also, people enjoy that more than healthy food. But that's not what's good for our body. And so, people tend to put the wrong food in their body more and more which leads to unhealthy lifestyle. Probably like access to food. Like transport and stuff.
Youth 9	I think it is also an access thing. Like to transport and stuff.

Theme 2: Intellectual skills development

Intellectual skill development included sub-themes of analysing and critical thinking at the individual level of social change. Intellectual skill development was demonstrated as youth discussed the issue of prediabetes aetiology and critically assessed health issues in their community contexts: *"…[we] learned things in a way that we could understand but also think 'why for our Pasifika peoples' is this here?'…"*

The youth participants interpreted their culture, drawing upon knowledge of the past and their personal experience in modern New Zealand to explore the changing conceptualisation of health for Pasifika peoples and the implications for healthy lifestyles promotion. The youth's intellectual skills developed throughout the programme and the modules invoked richer discussion, progressively.

Theme 3: Conceptualisation of leadership

Conceptualisation of leadership occurred at the individual level of social change. It involved the youth participants broadening their conceptualisation of leadership. They learned that there are multiple leadership styles and that each person brings unique strengths to a group:

> *"Before the programme, I didn't even know the basics of leadership. But now I know there are a lot of things that need to be behind the leaders."*

The programme helped the youth consider themselves as leaders (Excerpt 4).

Excerpt (4): Henderson Focus Group Discussion	
Facilitator	So, my next question is, how has your view of leadership changed?
Youth 1	It has changed a lot.
Several youth	Yeah.
Youth 2`	We are all leaders.
Facilitator	Can you elaborate on that a little?
Youth 3`	Before I got here, all I thought that a leader was someone that was in charge.
Youth 4	Firstly, I thought that leadership was just a one-person role. But then, it's not just someone high up. Anyone can be a good leader and take the role.

The Fono CEO claimed that the programme was essential to develop youth leaders and challenge the traditional Pasifika understanding that leadership must involve titles and that the programme cultivated the youth's leadership skills:

> *"When we look at our forefathers, they are navigators, and they are leaders. So somewhere in there in our DNA, it has already been built into. It is how we harvested it out, and tools like this will help them break it out and navigate their own skillsets. So, part of this was also preparing them ... whether you are born into the position of leadership or not, leadership skills and becoming a good leader is actually through development."* (The Fono CEO)

Theme 4: Self-awareness

Last, self-awareness included the sub-theme self-esteem and emerged at the individual level of social change. Self-awareness included skills identification (elaborated on within the behavioural change pillar section) and learning about their strengths and weaknesses as leaders. The programme encouraged the youth participants to *"know yourself and have the right motivation for everything you are doing."* The youth claimed that the programme

allowed them to feel more secure in themselves, increase their self-esteem, and realise that they add value to their communities:

> *"Well, this isn't something that I learned, but something that I just need to remind myself: it is okay not to be the loud kid or the kid that makes a loud impression. With my involvement in the programme, I was not really the type to put my hand up, but that is okay, and I can still contribute meaningfully."*

The community research facilitator in Tokoroa stated that the youth also gained awareness about the strengths that they had as a community: *"They [the youth] left the programme having a better understanding of their capabilities as a community."* (Community research facilitator, Tokoroa)

Behaviour pillar

The behaviour change pillar included themes of community mobilisation, leadership skills, design-thinking skills, and healthy lifestyles capacities (Figure 13).

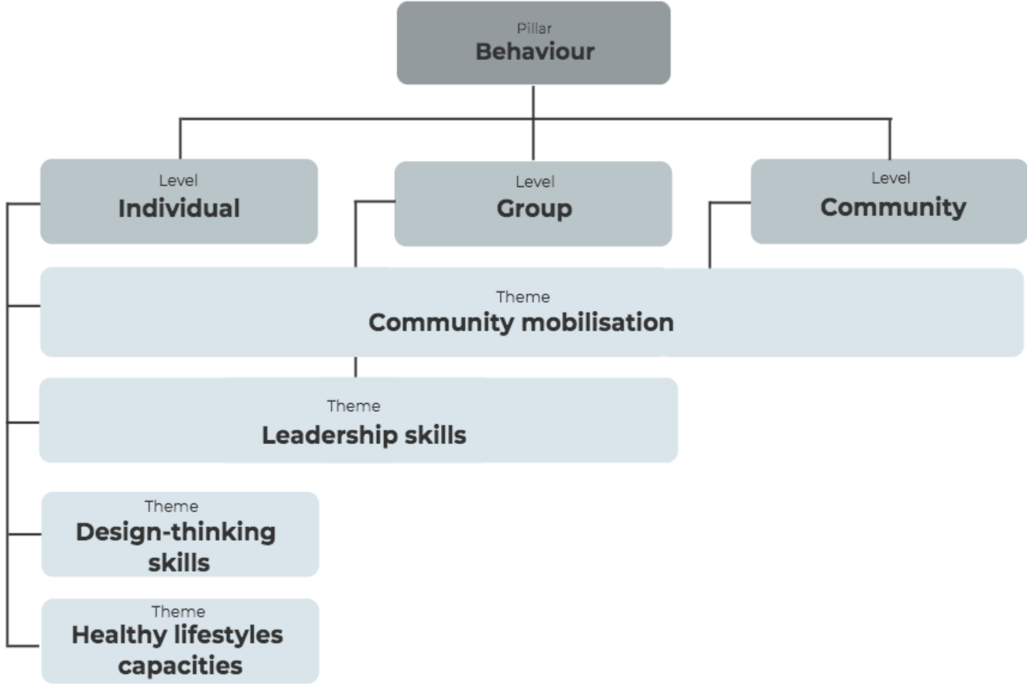


Figure 13: Behaviour pillar programme evaluation themes

Theme 1: Community mobilisation

Community mobilisation included sub-themes of community engagement and knowledge translation at the individual, group, and community levels of social change. Community engagement involved the youth volunteering within their communities (Excerpt 5):

Excerpt (5): Henderson Focus Group Discussion

Facilitator	So, in the programme, we talked a lot about empowering you to make positive change. What have you done in your community to make change?
Youth 1	I found an organization I am passionate about to go volunteer. It shows people that you are there with a heart to serve.
Several youth	Yeah.
Youth 2	It shows, especially with young people, these days, that you have to go out and learn and do something in the face of people older, it speaks. And there was a study that showed that young people now days, they struggle to stay in a job. They can't… they struggle. They will stay there for like 3 months max and then they will leave. But for you to actually step out and volunteer- I think that speaks to you as a leader.
Facilitator	And what kind of impact is that having?
Youth 2	I think that other youth within the community will look up to us and follow us and see us and start to change themselves, even though they have not been a part of this programme.
Youth 3	A lot of people, even after the intervention, kept doing it [walking]. They were still continuing to walk. It was pretty cool that we started something.

Community mobilisation encapsulated the youth's participation in other community and health promotion initiatives outside of the programme. Community mobilisation often involved the youth participating in their church communities or initiating pro-healthy lifestyle behaviour change within their families, particularly regarding diet and physical activity. Youth claimed that their families *"…learned from us."*

Knowledge translation involved the youth applying their developed capacities and capabilities to initiate specific social change projects (Table 12). The community mobilisation change projects ranged from: (i) working in health promotion for Pasifika girls, (ii) initiating healthy food sales at school, (iii) initiating a breakfast programme for their sports team and within their respective churches, (iv) facilitating health promotion programmes, (v) pursuing a bachelor's degree in health psychology, (vi) organising an adult physical activity programme, and (vii) running a vegetable programme.

Table 12: Community mobilisation knowledge translation examples

Case study	Youth description of community mobilisation action plan
(i): Leading Pasifika girl's health empowerment programme	"With that new job that I've got into, I was inspired by the programme that we were in. Part of my role is going to high schools over the Shore and implementing a strategy with teenage girls to promote physical activity but also target the nutrition side, and doing in a way that will be receptive of Pasifika. I did the programme and realised how overlooked it is... you wouldn't look at someone's socioeconomic status, you wouldn't think of that. You'd think of it as people suffering from diabetes and their poor life choices with their food. You would not look at it because they cannot afford it. So, the programme that I am doing, we must try to do it in a way that the Pacific girls would receive the information. Again, with the Fonofale model, it is just trying to target things through there."
(ii): Selling healthy food at school	"At school with the tuck shop, I came up with one idea for them to sell vegetables, more fruit, and less junk food. They went on board with that, and now we are doing it. We have more sports team who are advising their players to go to the tuck shop more often. It's good."
(iii): Organising a breakfast programme	"Well we have morning training (netball), and I made each section of the group bring something for breakfast. Some girls come to school without having breakfast, but it is important. So, we just bring healthy food like fruits and that to get us through the day."
(iv): Delivering prediabetes educational presentations	"For me, it was the presentation—the PowerPoint. I put together a presentation to cater to mums and dads at church and then our youth and then our kids aged 5-13-year-olds. I am doing a presentation to teach them, so they know what diabetes is because I was talking to them in the first week. I did a survey type thing if they know what diabetes is. A kid wrote down "oh it is just normal" and that it's become the norm for us Pacific. It is something that we just overlook. So, I have done presentations for those three different groups just to teach them what diabetes is and how they can prevent it."
(v): Personal career development	"I changed my degree because of it [the programme]. I was doing nursing. I was in my second year, but I didn't like it. So, I just realised how overlooked the mind, and the brain state of things is in term of health. So, I cross-credited it over to psych. It understands how people think. What I learned in the programme changed what I wanted to study. Yeah. It was a big deal."
(vi): Initiating physical activity group for adults	"At church, I have organised the elderly, not the elderly, but I guess the 30-50-year-olds - my parents and their friends. I have organised something every Saturday. They will go out to the track and do some physical activity.

	It started a culture… a lose weight challenge. It was for eight weeks, a group called "Listen to God's Call." Every week, they weighed themselves and saw if they lost weight. Then on Saturdays, they would just get together in the mornings, exercise, then go home and have something healthy to eat. It is good to see that from our older generation. That could channel down to the younger generation."
(vii): Organising vegetable programme at church	"For our church, we have members who deliver the fruits for stores and whatever they have leftover, they bring that to the church so that the kids eat that for morning tea on Sunday, just after Sunday School, before church starts. And then each family goes home with a bundle of fruit if there's any leftover."

The community research facilitator in Tokoroa noted that the youth's engagement in their communities inspired many of the adults involved in the interventions, motivating them to continue to engage in pro-healthy lifestyles:

> *"So that was a lot of the feedback from the interviews was that they [the intervention participants] needed that push and if it, if their children didn't approach them, they'd still be doing their everyday things. They needed that push, and that start. So, a lot of them are still out there walking. They have brought it to [SWPICS's] attention that they do want to do a marathon in Rotorua!"* (Community research facilitator, Tokoroa)

Theme 2: Leadership skills

Leadership skills development spanned the individual and group levels of social change. For many youth, leaderships skills development was a major outcome of the programme:

> *"I will take away my leadership skills because I first was not confident and then when I kept going to the programme and just being brave and taking the risk to just talking in front of everyone has just really helped me with my confidence levels which have made me a better leader."*

Specific leadership skills included open-mindedness, communication, and initiative, as evidenced in Excerpt 6.

Excerpt (6): Tokoroa Focus Group Discussion

Speaker	Dialogue
Facilitator	What did you learn yourselves and leadership throughout the programme?
Youth 1	Leadership skills!
Facilitator	Skills! Nice. What does that mean for your leadership style?
Youth 2	I think I became more open-minded towards different things that I was closed off to before.
Community Research Facilitator	And I think that you demonstrated that one through leading the walks, eh? Taking the skills from the programme and implementing that.
Youth 3	Maybe, just… imagination! Very imaginative with people's ideas.
Youth 4	And like, understanding other people.
Youth 5	Yeah. Understanding how others work.
Youth 4	You know, I am pretty strong-minded and it kind of opened my eyes.
Youth 5	Like, there's so much people that are like, are quite closed about their things.
Youth 4	But after the programme, people were more confident. And now, it's all about being open with everyone.
Several youth	Yeah.
Youth 6	I think I have more understanding about the people around you now.

Youth expressed that they were required to listen to one another and accept others' ideas and suggestions to create one group intervention in the co-design process. The youth's initiative involved the youth actively engaging themselves in community mobilisation programmes. The youth liked being taught about different leadership skills and how to use them effectively. The youth noted that often this empowered them to take initiative and communicate their ideas to the wider group. Communication involved the youth using their voice to communicate their ideas with others and included the youth's increased public speaking abilities (Excerpt 7).

Excerpt (7): Tokoroa Focus Group Discussion

Facilitator	So, in the programme, what did you learn about leadership? What Leadership skills developed throughout the programme?
Youth 1	What's inside of me, man.
Facilitator	What does that mean, specifically?
Youth 2	Well, I have it in me…Public speaking. Like, in front of people.
Youth 3	For most of us, that was a big challenge. Most of us didn't really like talking at the start and now we just can't stop talking!
Community Research Facilitator	So, for example, [participant], we all know she is very shy, however she came out and did leadership you know, presentations and stuff like that. So that is something that you now see on a regular basis.
Youth 4	That leadership one, so like during the intervention, like how we would to the exercise and we had to come up with our own. At the start, everyone was just like 'nah let's not. Next week.' And then once we did it, we realised that it was alright, and we could do it. We got more confidence after a while.

The SWPICS CEO stated that the programme unlocked leadership potential within the youth and inspired them to be a part of affecting change in their communities:

> *"They [the youth] have gone to such a level of leadership not only within their individual school settings but also in their community settings. It's given them a whole other level of confidence that was always there, but I believe the PPYEP just kind of unlocked something. It was that kind of awakening and opening."* (SWPICS CEO)

Leadership skills connected to the third theme of the behavioural change pillar, design-thinking skills.

Theme 3: Design thinking skills

Design thinking skills development occurred at the individual level of social change. The programme prompted youth to envision a healthier future for Pasifika peoples and determine how to achieve this vision:

> *"I think that for me, it has encouraged me to look not only at my age group but like the older age group as well as the kids. It has given me the confidence to you know, like speak to the kids as well about diabetes and like ways they can stop it."*

The youth identified what individual attributes and skillsets they have and how they can be used to advance social change in their communities: *"when you know we are capable of doing… you know how we can solve it, and in what kind of way."* They gained confidence in their ability to formulate effective strategies to make a meaningful change: *"once we did it, we realised that it was alright, and we could do it. We got more confidence after a while, and we thought 'we can do this.'"*

The youth remarked that one of the most important things they learned in the programme was how to organise events and functions (as evidenced by the community mobilisation case studies aforementioned). The youth observed that learning the model of developing an intervention and going through the implementation process has given them an array of skillsets that they will retain from the programme and implement into their lives:

> *"What I will take away from the PPYEP programme is the action plan because that is the main part of the programme for me; it is the way that we help others prevent prediabetes. I have learned a lot of skills that I will enter into my skills kit. I have also learned the intervention model as a whole and then the implementation process into our communities."*

Theme 4: Healthy lifestyle capacities

Healthy lifestyle capacities development was another major theme of behavioural change and the entire programme. It encompassed the sub-themes of food agency and mental health strategies and occurred at the individual level of social change. Food agency included specific capabilities and capacities of cooking, budgeting for different family realities, and nutrition. It pertained to the skills developed and the subsequent change in the youth's behaviour. Excerpt 8 shows the specific food agency capacities and capabilities that the youth developed, and how they translated them into pro-healthy lifestyles behavioural changes amongst themselves and their families.

Excerpt (8): Tokoroa Focus Group Discussion

Facilitator	What were the most important things that you learnt in the YEP?
Youth 1	Lots of stuff about leadership and health.
Youth 2	About prediabetes and that it is a real serious problem for Pasifika people.
Youth 3	Yeah, especially 22-44 years.
Youth 4	Nutrition.
Youth 5	I remember budgeting.
Youth 6	Cooking!
Youth 7	Yeah, cooking healthy things… like salads and stuff. Tacos.
Youth 1	My family eats healthy now
Facilitator	In what ways?
Youth 1	Eating good food. Greens, not just meat. Vegetables. Eating fruits.
Facilitator	Wow. Anyone else?
Youth 2	We used to by our fruits and veggies and meat at the supermarket. But now we have friends who are on a farm and they grow food and stuff- and that's where we get our food from!
Youth 3	Yeah, it's just sort of like, you know, you're picturing food different, cause like, like you have very little information of what you eat so you just eat it because it tastes good. And if you think that your family members are eating too much of that- I stop them. I wouldn't have done that before the programme.
Facilitator	Awesome.
Youth 4	For me, it was cooking more
Youth 5	For me it was being active. Not necessarily training, but like yeah… working out and walking and not sitting on a chair, every day.
Several youth	Yeah.

Last, the youth participants also learned practical strategies for improving mental health and wellbeing and participated in a wider discourse around challenging the stigmatisation of mental health (Excerpt 9).

Excerpt (9): Henderson Focus Group Discussion

Speaker	Response
Facilitator	What did you learn about mental health?
Youth 1	That anxiety, depression, money stress, relationship issues, things that cause angst, personal challenges…they are all real, but solvable.
Youth 2	Understanding that people are more complex than at face value.
Youth 3	Yeah.
Youth 4	We did the module to build empathy.
Youth 5	To build each other up.
Youth 6	Yeah, and we learnt ideas.
Facilitator	Ideas to do what?
Youth 7	To overcome our emotions
Youth 8	Yeah, lots of Pasifika youth don't know how to talk about things.
Youth 7	To express ourselves in a healthy way.
Youth 3	And I really think that we know that it is okay to rely on others for support.
Youth 5	Everyone has a journey.
Several youth	Yeah.

Service sustainability pillar

The service sustainability pillar included themes of health service provider relationship and increased capacity to engage with youth (Figure 14).

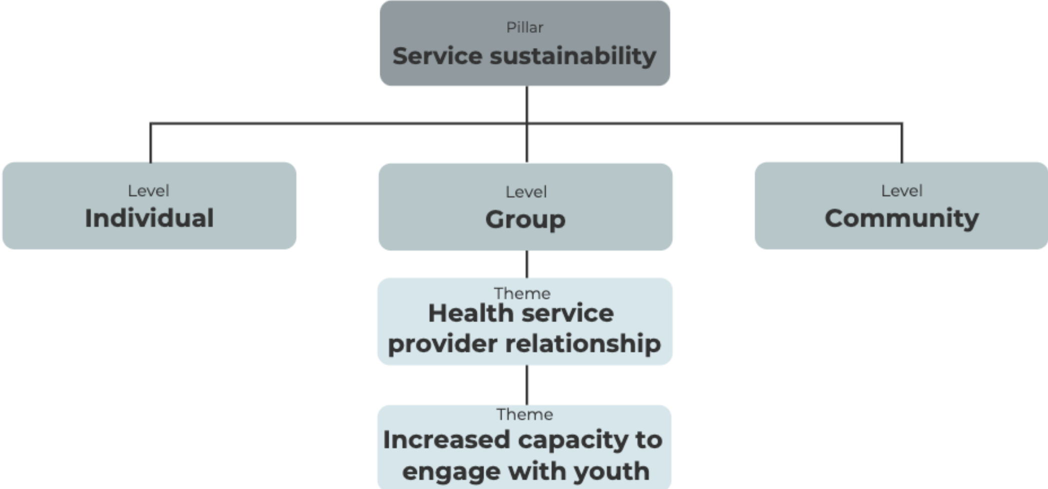


Figure 14: Service sustainability pillar programme evaluation themes

Theme 1: Health service provider- researcher relationship

Health service provider relationship included sub-themes of partnership and collective decision-making and occurred at the group level of social change. Partnership comprised of building and upholding strong relationships between all research stakeholders. Partnership encouraged collaboration and shared vision of the programme development and delivery:

> *"The partnership allowed for the mutual understanding about the space that we were going to work in and allowed a higher level of flexibility to suit the needs of the community and where we are at."* (The Fono CEO)

The relationships included opportunities for collective decision-making amongst the communities and the wider research team:

> *"The other part that I like [about the relationship] is that we can hold each other accountable and challenge- so that the relationship is really honest and upfront. It gives you a higher level of engagement because of that trust and that responsibility that partners have."* (SWPICS CEO)

Theme 2: Increasing organisational capacity to engage with youth

Increasing organisational capacity to engage with youth encapsulated how the programme equipped each organisation to develop young agents of social change:

> *"[the programme] encouraged leadership from us and within the youth so that they can influence their respective community or across the Pacific and the Pacific community."* (The Fono CEO)

The community organisations claimed the programme allowed their organisations to involve more of the community (i.e. youth) in health promotion efforts, an important component of their vision of Pasifika health:

> *"[the programme] allowed us to provide a much more holistic, wrap-around approach to health in all corners- whether it be social, cultural, for [the youth] in particular, educationally. This particular service kind of allowed us to broaden that out and provide a much more of a holistic, wrap-around approach to youth and grow their own levels of innovation."* (SWPICS CEO)

Hiring a community research facilitator and offering the facilitation training to all SWPICS and The Fono staff was a large means of organisational capacity building. The Fono CEO remarked that the programme embodied how they strive to engage with youth and provided them with tangible ways to achieve it:

"The training equipped us, and we understood what the programme was about. It was important for us that there were opportunities for new support and new opportunities to fund and support our youth." (The Fono CEO)

Socio-political pillar

The socio-political change pillar included one theme, reconstructing Pasifika cultural norms (Figure 15).

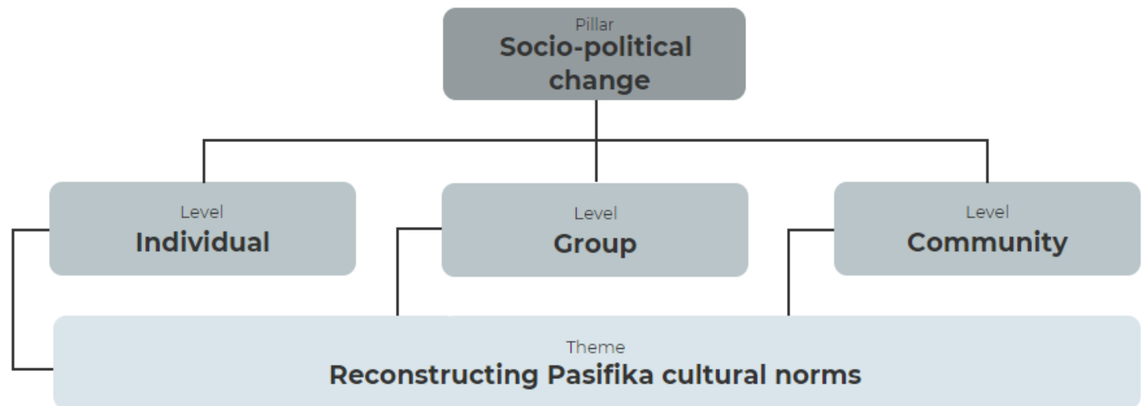


Figure 15: Socio-political pillar programme evaluation themes

Reconstructing Pasifika cultural norms

Reconstructing Pasifika cultural norms was the only theme for this pillar, affecting all three levels of social change. Reconstructing Pasifika cultural norms encompassed youth participants reshaping their perception of cultural norms of health realities for Pasifika peoples; it also encompasses the organisational and community engagement to support and develop Pasifika youth as leaders of change. The sub-themes included the conceptualisation of health and the de-stigmatisation of mental health and youth leadership.

First, the programme changed the youth's conceptualisation of health to encompass a more holistic definition. It included the broadening of the youth's definition of health to consider healthy behaviours as part of one's lifestyle and to encompass physical, spiritual, mental, and socio-environmental pillars; cultural identity; family; religion; and wellbeing. At the end of

the programme, the youth described health as a lifestyle and defined it by the Fonofale model of health (Excerpt 10):

Excerpt (10): Tokoroa Focus Group Discussion

Speaker	Response
Facilitator	So, my next question is, what does health mean to you?
Youth 1	Your lifestyle.
Several youth	Yeah.
Youth 2	Your lifestyle, your wellbeing.
Facilitator	Can you elaborate on that a little?
Youth 3	Like, your physical wellbeing.
Youth 2	Physical, spiritual, mental, emotional and social.
Youth 4	Its where I am from.
Facilitator	So, what does it mean to 'live healthy?'
Youth 5	Taking care of your body.
Youth 6	Eating the right food.
Youth 7	Having time for yourself.
Youth 6	The Fale, it teaches you to work through it.
Youth 8	Without one, there is not the other.
Youth 9	There are different dimensions.
Youth 2	Without the four pillars, the home will crumble.
Youth 3	And without the roof, you're going to get wet.
Several youth	Laughter
Youth 7	I can see the design too. I remember drawing 'religion.' I drew a cross somewhere because that was important for everybody.
Youth 8	And family was a bit part of it.
Youth 7	I remember a rainbow…. I don't remember why we drew a rainbow?
Youth 5	I think it was happiness.
Youth 1	And LGBTQ+

The conceptualisation of health also extended into the group level of social change; both community service health organisations valued a Pacific-centred, holistic conceptualisation of health. At the end of the programme, the youth were motivated to shift the narrative of negative realities for Pasifika health outcomes. One youth remarked that are proud to be Pasifika, however, being Pasifika is associated with poor health, and this is punitive. They claimed that as youth, they have to work to change people's mindset about how others perceive Pasifika peoples and what they can offer to society:

"It also made me realise that to be strong as Pasifika is important. Because we are known as unhealthy, diabetic people, and it's good to change people's mindset about how they think about us. Because we are not just- we are more than that."

This youth's conceptualisation of health incorporated knowledge on mental health and the process of de-stigmatising mental health in Pasifika communities. The youth envisioned re-shaping cultural perceptions of health to change the negative health outcomes experienced by Pasifika peoples beyond prediabetes and emphasised the importance of mental wellness.

The youth also noted there must be more opportunities for youth leadership in their communities and that they must take an active role in the social change towards healthy lifestyles. They remarked that after participating in the programme, their voice as a younger generation is stronger. They claimed that their leadership potential is more valued by their communities, shifting the traditional norm that leadership comes from older peoples in the community:

"Our voice now as a younger generation and as a Pacific community is stronger. Back then, I don't reckon it was valued. I think it was more 'I'm older, so you should listen.' But like now, it is just like our youth's voices are so important."

The community partners also noted this shift in youth potential. The Fono CEO said that the socio-political ramifications of youth engagement have the potential to shift local and national health policy:

"The socio-political stuff. That's important. How do we influence youth to be champion that positive social change? It's easier saying it than getting it done. I think as a community health organisation, I'd love to see our youth being in power, the youth leading it. The youth leading the change. And I am a firm believer that if

they do that well if they mobilise their community, then out communities will have massive impacts on both local and national health policy stuff." (The Fono CEO)

He then claimed that this shift in cultural norms is emergent and synergistic:

"It is almost like a phenomenon. The impact, when you get it right, of supporting them. When channel their energy right, they become a political beast" (The Fono CEO).

Both organisations suggested that programmes such as the PPYEP that initiate and inspire social change have the potential to shape political systems in New Zealand. The health service providers were proud of the programme and the long-lasting change that it will have in their communities:

"If I do nothing else in this work as an employee here if I do nothing else, I will be really happy that we have left a mark on these young people. They are going to step and make their own mark: not my mark, but their mark. And I am really assured about where that is going to go for them" (SWPICS CEO).

Analysis (iv): Programme uptake

The following section presents demographic data on participant retention and results from the programme evaluation surveys and the inductive thematic analysis on the programme uptake. It presents themes shared by both communities and location-specific themes, where applicable, and separates the community partner and youth perspectives.

Programme satisfaction and evaluation survey results

The module evaluation survey results from the question, *"what did you think about the module"* were transformed into a 5-point Likert scale (where 1= low satisfaction and 5= highly satisfied). The mean for each module was calculated (rounded to the nearest 0.1, +/- standard deviation (SD)) for the entire programme sample (i.e. Tokoroa and Henderson combined). The module sample was based on the attendance for each specific module (Table 13) (Figure 16). Module 2.1 (the community contract) was omitted because the youth did not complete the evaluation on the first programme session.

Table 13: Programme attendance and satisfaction

#	Module	n	mean	+/- SD
II.I	Community contract	41	-	-
I.I	Historical perspectives of healthy lifestyles for Pasifika peoples	38	4.8	0.47
I.II	Leadership compass	38	4.7	0.57
I.III	Heart Health	38	5.0	0.18
I.IV	Navigating a supermarket	31	4.9	0.35
I.V	Community cooking	37	4.8	0.28
I.VI	Mental health and wellness	37	4.8	0.50
II.II	Root-cause analysis	28	4.6	0.61
II.III	Gift + Issue = Change	35	5.0	0.20
II.I V	S.M.A.R.T. Goals	26	5.0	0.21
II.V	Seven-steps	29	4.8	0.52

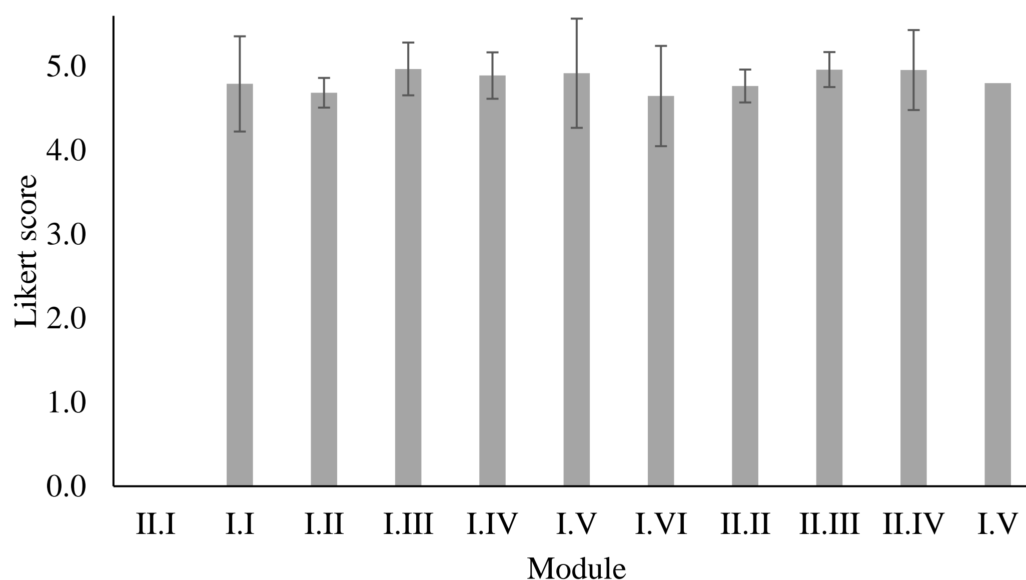


Figure 16: Mean evaluation survey scores for the entire programme sample

Overall, there was high programme satisfaction, with mean scores within the highest two score points (4.6-5.0) with low +/-SD (0.18-0.61). Both empowerment modules and co-design modules were similarly received. The *Heart health* and *Navigating a supermarket*

modules had the highest satisfaction amongst the empowerment component (5.0 +/- 0.18SD and 4.9 +/- 0.35 =SD, respectively), and the *Gift + Issue = Change* and *S.M.A.R.T. Goals* modules had the highest amongst the co-design component (5.0 +/- 0.20SD and 5.0 +/- 0.21SD, respectively). The *Root cause analysis* module had the lowest overall satisfaction score; however, it remained high (4.6 +/- 0.61).

Retention

The overall programme retention was 71%, with 41 youth starting the programme and 29 completing the programme, one participant less than the target programme sample (n=30 youth), based on the pilot study (2016). Participant retention and location, gender, ethnicity, and age were compared to understand the effect of demographic variables amongst the sample. Overall, the programme had higher uptake in the rural location and amongst female participants. Tokoroa had a higher retention rate than Henderson, 78% compared to 65%, respectively; females had higher retention (77%) than males (58%). It was difficult to determine meaningful differences in retention for the overall sample based on ethnicity and age alone; however, there were differences based on locations (Table 14). Of the participants who were retained in the programme, in Tokoroa, there was greater ethnic homogeneity, with 86% Cook Island. In Henderson, comparatively, there was greater ethnic diversity, with Samoan (33%), Tongan (53%), and Tuvaluan (13%) ethnicities. Last, the mean age of participants who were retained in the programme was 17.03 years, only slightly younger than the mean age of 17.29 years that started the programme. As evidenced in Table 14, however, the participants in Tokoroa were notably younger than the Henderson participants (16.03 years compared to 17.78 years, respectively).

Table 14: Participant ethnicity and age differences based on location

	Started programme (n)		Retained N (%)	
	Tokoroa	Henderson	Tokoroa	Henderson
	18	23	14 (77.77)	15 (65.22)
Ethnicity (% total sample)				
Cook Island	16 (88.89)	0	12 (85.71)	0
Samoan	1 (5.56)	6 (26.09)	1 (7.14)	5 (33.33)
Tokelauan	1 (5.56)	0	1 (7.14)	0
Tongan	0	12 (52.17)	0	8 (53.33)
Tuvaluan	0	5 (21.74)	0	2 (13.33)
Age (years)				
Mean	16.11	18.17	16.03	17.78

Community partner's perspective on programme uptake

Table 15 presents the inductive thematic analysis and the emergent categories of the programme enablers and barriers as well as and future translations for the programme.

Table 15: Programme uptake from the community partner's perspective

Programme uptake		
	Theme (s)	**Sub-theme (s)**
Programme uptake enabler	Service alignment	Organisational participation Care
	Community context	Social cohesion Fitting with the young Pasifika population demographics
	Harnessing youth potential	
Co-design-specific uptake consideration	Lack of health capacities and capabilities *Tokoroa specific Cultural considerations * Henderson specific	
Future programme translations	Embedding programme into existing services Developing a youth governance council	Evaluation

Programme uptake enabler

Theme 1: Service alignment

This theme encompassed how the objective of the programme and research methodology aligned with each community health service organisations. It contained the sub-theme of programme integration to describe how the programme was embedded within each organisational structure. There were three key aspects of this alignment: (i) the programme was Pasifika-specific, (ii) it focused on youth education and leadership development, and (iii) it addressed a particularly relevant and important issue in each community, prediabetes.

(i) *"Being a Pasifika organisation, we are all about Pasifika and in the health domain, and the education domain- you know, I think it fits very well, as an organisational purpose."* (SWPICS CEO)

(ii) *"It also aligned with our focus on the development of leadership and the leadership from the youth within themselves, how do they influence their own respective community or across the Pacific and the Pacific community. So, that aligns with us."* (The Fono CEO)

(iii) *"Diabetes is an important issue for all Pacific island people. And that should be the main priority. So, reducing or preventing prediabetes sits well with The Fono plus the church and the communities."* (The Fono community research facilitator)

The Fono CEO claimed that there was a rigorous process in place to ensure that all external research upholds the overarching strategy of The Fono and adds to the values and vision of the organisation. They remarked that they are immensely protective of their community, particularly the youth, and, therefore, any participatory research must uphold its community-based methodological principles. Regarding this research, he stated that:

> *"They [the programme] aligned. Firstly, it is a strategic priority for us. For any projects that are coming through, it goes through a round of testing, whether this will add value to our visions. And if not- then we are not going to do it."* (The Fono CEO)

The SWPICS CEO stated that the PPYEP allowed for organisational-wide involvement through the facilitation training. She also noted that the PPYEP project consistently demonstrated a high level of care for the wellbeing of the youth participants and the wider

community. She commented that this "care" succeeded beyond the research credentials we had, subsequently increasing her support for the project:

> *"I know that our people, they don't care what you know, they want to know that you care. And certainly, you have demonstrated that care for my community and my young people. You had to demonstrate and sincerely care, which is certainly the feedback I've got."* (SWPICS CEO).

Theme 2: Community context

The theme community context described how the programme was tailored to fit the needs of the Tokoroa and Henderson groups and contained the sub-themes of ownership, relevance, and social connectedness. The programme offered an opportunity to utilise community insight outside of a rigid, predetermined research framework:

> *"So as much as they [the outside researchers] may have more of a 'world, academic view,' there are some strong community views. The project said 'this is what we'd like to achieve' and then how we do that was up for us to decide. So, it was less restrictive and rigid."* (SWPICS CEO)

The community research facilitators and youth felt ownership as they were involved in these conversations and processes. The model of co-design was also particularly relevant because it affected change at the community level:

> *"I learned how important preventing prediabetes is. Would we support another intervention? Yes. Part of that is, I think one of the reasons, is the ability to go into the community and make a change."* (The Fono CEO)

Both the Tokoroa and Henderson groups also noted that social cohesion, defined in this research as the relationships people hold with others (267), determined programme uptake. The SWPICS CEO described Tokoroa as a uniquely socially cohesive society, one grounded by the foundations of their forefathers and their Pasifika culture. She described that any external stakeholder must engage with the community values that act as a *"social conscience"* amongst Tokoroans. Further, she elaborated that successful programme uptake depends on abiding the social framework in Tokoroa and that this project did so:

> *"The social conscience that is prevalent because of that kind of leverage of where we have come from. So, anyone else that has come in radically and tries to do something else - if they did not have those cornerstones - it was not going to go far. If you could connect on any of those levels, then you had a much better success of being able to engage in the community because we are quite formidable around upholding some of those key values. That social network."* (SWPICS CEO)

The programme also had high uptake because it matched the youthful Pasifika demographic composition. The Fono CEO stated that the Pasifika population in Henderson is young, demographically, and that youth exhibit more potential to affect change based on their deeper understanding of the English language, acculturation into modern New Zealand, and uptake of technology:

> *"I just think that it is fantastic that the youth be the leaders in driving that change into the community. I think part of that is that we keep in mind that the population is young and that the environment that we operate now has a lot more the youth that has a lot more of an understanding of things than some of our older generation. They could navigate the systems quite a lot more easily. They are our future. They*

will become the people who will coordinate and lead the community now and in the future." (The Fono CEO)

Theme 3: Harnessing youth potential

Last, the programme had high uptake because it harnessed youth potential to improve community health. The community partners noted that the youth had an enormous ability to mobilise their communities. The SWPICS CEO stated that the youth have a practical, grounded outlook that enables them to keep moving forward despite adversity:

> *"You know they [the youth] are quite pure in their outlook. They are not hung up on other things that you know 'we can't do this because they will do this.' They are just kind of like 'yeah'… I would not say naive, but they just had a different viewpoint because they did not have any hang-ups. One plus one will always equal two… that's all that they saw, you know - they just go forward."* (SWPICS CEO)

She continued to state that the young people effectively recruited intervention participants because of their social capital within their families and their overall engagement in the intervention development and implementation. She said these would have been untapped participations, otherwise absent from their organisational activities and programmes:

> *"It was the young people themselves. I would say 80% of them [the intervention participants] would not have been actively engaged in our organisation. And they [the youth] got them. Because it is different if I say, 'this is going to benefit you, and it's great if you come.' Whereas for a young person to say, 'I need two of my family, are you going to come?' Of course, they have to come! So, you know, the youth had a much better join card then we could ever, ever have played. We built relationships*

with all of the intervention group, you know- we know them, but it was for the youth." (SWPICS CEO)

In Henderson, The Fono CEO stated that it was empowering to involve the youth in the process of co-design. He explained that youth often are not encouraged to participate in conversations of community change. Through the model of co-design, they were provided with a rare and empowering opportunity:

> *"It is a positive thing when you [the youth] are invited to say, 'we are here to co-design everything as one, these are the things here… let's think about it.' It's empowering to be given that opportunity to be there."* (The Fono CEO).

Co-design- specific uptake considerations

There were no common co-design uptake considerations between Tokoroa and Henderson. In Tokoroa, the lack of health capabilities amongst the community partners challenged the intervention planning and implementation:

> *"For instance, not all of the kids were comfortable with taking blood pressure and some of those measurements we couldn't take because one of our challenges as an organisation is workforce development."* (SWPICS CEO)

As such, increased capacity development opportunities emerged as a future translation of the model of co-design in Tokoroa. The SWPICS CEO stated that her organisation cannot yet provide these educational developments; however, they would be open to collaborating with external organisations and relevant opportunities:

> *"I think that we could have given them [the youth] more training. I just wondered what else could we have done to, encourage a pathway into health? I thought at the*

time 'oh, this is a wasted opportunity- I could have had some career development aspects' you know… together with the intervention itself. Our community is not at a point where it could provide those levels of educational developments- we are not there yet. So, if we were to look at building and providing capacity, we'd still be reliant on external [partners]." (SWPICS CEO)

In Henderson, it was more challenging to ensure that the model of co-design was culturally specific to account for the ethnic differences and implications in designing one group intervention. The community research facilitator stated that the group composition was diverse and that different Pasifika ethnicities have different worldviews; however, that the model provided opportunities to discuss these differences and determine a plan moving forward:

"Different culture was one of the aspects that made co-design difficult because one design doesn't fit all of our cultures. We had Tongan, Tokelauan, Tuvaluan, and Samoan [participants] and they approach things differently. In the modules, we had to discuss things together, which was a good thing." (The Fono community research facilitator).

Future programme translations

Both SWPICS and The Fono shared that they both hoped to embed the programme into their services. The organisations claimed that it would be simple since the programme has already been tested within their organisational structures. They also stated that the programme matches the vision of their organisations to increase development opportunities for youth:

"Our organisation has to commit to some level of youth leadership. It's both strategic and operational that sets a standard of longevity but also protects it.

> *Hence, it's not dependent on you being here, but that it becomes embedded in the structure [of our organisation]."* (SWPICS CEO)

They also suggested that they create a youth "governance group" to continue the development of the programme and ensure that it is youth-specific and provide more opportunities for their services to engage with youth:

> *"You need to have a youth voice. I want to develop our own youth council so that the continuation of development programmes gives us a pool of young people that can articulate themselves and be engaged."* (SWPICS CEO)

One of the minor future translations pertained to a new evaluation component of the programme. Both organisations shared insight on the importance of evaluating programmes and services to ensure longevity. They claimed that the youth governance group could also steer the evaluation process if they developed more research capacities.

Youth's perspective on programme uptake

Table 16 presents the inductive thematic analysis and the emergent categories of challenges to participating in the programme and specifically, the model of co-design, and future translations for the programme.

Table 16: Programme uptake from the youth's perspective

	Programme uptake
	Themes
Programme uptake enabler	Relationships Engaging programme style Skills-based modules
Challenges to participating in the programme	Socialisation Unclear expectations Time commitment
Co-design uptake considerations	Collective decision making Setting clear parameters for the intervention
Future programme translations	Increased food literacy skills development opportunities * Tokoroa specific Better communication of expectations * Henderson specific

Programme uptake enabler

Both Tokoroa and Henderson shared common themes of programme uptake requirements, challenges to participating in the programme, and uptake considerations for the model of co-design.

Theme 1: Relationships

It was essential for the youth to build relationships with each other and with the programme facilitators. Much like the value, *relationship-building,* forming new friendships was a highlight of the programme, and it encouraged the youth to keep coming back and ensured that the content of the programme as well-received too (Excerpt 12):

Excerpt (12): Tokoroa Focus Group Discussion

Facilitator	So, my next question is, what kept you coming back to the programme?
Youth 1	Meeting new people.
Several youth	Yeah.
Youth 2	Probably being able to bond with people that I don't usually see in my everyday life. Um, especially because I was able to talk to them about the same topic and understand their point of view about how to prevent prediabetes.
Youth 3	Probably the people. Like the instructors. Yeah.
Youth 4	Working well with others. It just made the learning fun.
Youth 5	What I like most, was everyone coming on a Monday night and getting to catch up with Jen and Dani and all them.

The youth claimed that forming relationships encouraged them to step out of their comfort zones and participate fully in the programme:

> *"I enjoyed coming to see everyone like this one, and everybody else and not everybody that I would usually socialise with. I enjoyed learning new things with different people that I would not usually see in class and getting close to everyone. It's made me step out of my comfort zone and get more involved in the programme. Also, now, when we see each other, we say 'hello' and we greet each other, and we ask each other about the programme. If we didn't get it, we could ask for help."*

Theme 2: Engaging programme style

The highly participatory, engaging, and experiential modules were a highlight and ensured that the youth understood the programme content:

> *"I like learning about new things. And we learned them in like different ways. The blood pressure and the budgeting and the different foods we can and cannot eat. And like what to be aware of. Every Monday that we attended, I was able to learn about*

> *different qualities and different things that were linked to prediabetes. And it was cool the way we learnt about them cause it was fun and I was able to understand it, especially as a young teen cause sometimes when you learn about stuff like that it's like 'eh' what's happening here cause I am confused. But it was nice the way Jen and Dani explained it to us because it got me hooked on what I was learning."*

The youth shared that the programme encouraged them to be creative and share their culture too: *"I like I got to be creative and because I got to share some of my cultural experiences with everyone."* Simply put, *"you've just sort of just gotta be there to know. It's really fun."*

Theme 3: Skills-based modules

In addition to the engaging programming style, the youth appreciated that the empowerment and co-design modules were skills-based. At the end of the programme, the youth reflected upon all the specific, tangible capacities and competencies they gained and how these connected to preventing prediabetes. When asked about their favourite module, several youth stated that the healthy lifestyles capacity-building modules and the leadership and design-thinking modules were their favourites:

> *"What I enjoyed the most about the PPYEP is the learning. I have learned a lot of skills that I will enter my skills kit. I have also learned new modules such as different styles of leadership, the intervention model as a whole and then the implementation process into our communities."*

Challenges to participating in the programme

Theme 1: Socialisation

The youth described that at the beginning of the programme, it was difficult to socialise and share personal experiences:

> *"Well, at the start, I found that talking to other people was challenging because it was really awkward and ah, weird, but then as the weeks went by, we got closer and closer, and so I tend to like coming to the diabetes programme because I enjoy talking to everyone and it just made the learning fun."*

One challenge to participation noted in Tokoroa only was comprehension. Youth found that *"it was challenging comprehending everything I've been told."*

Theme 2: Unclear expectations

Both groups highlighted that the programme had unclear expectations of participation:

> *"…to be honest, coming into the programme, not knowing what I was getting myself into was a challenge... I was told that it was a health programme. And I thought that it was um talking about my own health instead, so I didn't know it was about preventing diabetes, - so I was keen but didn't know what was happening."*

The Henderson youth noted that the length of the programme was also misconstrued, particularly around the co-design process and the time-commitment of the intervention. They explained in the FGD that *"the common issue that has been raised here tonight, what's expected from us wasn't clear, especially with the length of the programme,"* connecting with the third theme, time commitment.

Theme 3: Time commitment

Time commitment emerged as a common barrier to participation in Tokoroa and Henderson. The youth expressed that it was difficult to be punctual because of conflicting family obligations and that the length of the programme was not explained clearly:

> "So, first, going back to the timelines… You cannot say that it will be for ten weeks and then expect us to commit 18 weeks. I don't know how you'd get around that. But it annoyed me that it went longer than stated."

Uptake considerations for the model of co-design

Theme 1: Collective decision-making

The uptake of the model of co-design depended on the process of collective decision-making, which, postulated the largest challenge for both Tokoroa and Henderson groups, particularly in determining which of the several preliminary plans to progress and later implement in their communities. Once they decided upon a direction, however, the co-design was easier, as evidenced in Excerpt (13):

Excerpt (13): Tokoroa Focus Group Discussion:

Facilitator	So my final set of questions are around planning the intervention. So, overall, what was it like planning the community intervention?
Youth 1	Yeah. It was alright. I found it exciting. Yeah. I thought it was cool. Once we got going.
Youth 2	And once the ideas came, but leading up to it, it was like "oh- what are we going to do?" was our hardest part. But then once we got it, and came up with what we were going to do it was much easier.
Group	Yeah!
Youth 3	And then it was much easier. When we got picked up, it was like "oh, we are doing this!" We are going this route! This way!
Youth 4 ..	Yeah, like, once we knew what we were doing… it was great. Once we planned it, we decided that "yup- we will do this." There were .. lots of ideas that I liked. So, it was tricky at first. But once we agreed to something, it was easy as."
Youth 5	Yeah, the adrenaline for it was like "yeah!"
Youth 1	And the roles! Deciding who was going to do what. We were all too shy!
Facilitator	But yeah, once we got started. It was alright. We found our groove.
Youth 6	Yeah, we'd get our own system.
Youth 7	And then we would do that.
Youth 8	And then we got into it, and we knew what we were doing.

Theme 2: Setting clear parameters for the intervention

Co-design uptake also depended on setting clear expectations for the youth. The youth stated that at first, the parameters of the community intervention were undefined and that the success of the model depended on a thorough understanding of expectations:

> *"I reckon that the planning was good. But I think that it just wasn't clear enough for us. First, we thought it was a one-time thing not weeks that we had to run something."*

Future Translations

The Tokoroa and Henderson groups suggested different modifications for future translations of the programme. The Tokoroa youth suggested having more food literacy skills development opportunities. The Henderson youth suggested clarifying expectations of participation. They suggested that the programme should follow a more rigid schedule.

Chapter summary and conclusions

Chapter 4 presented the results of the four analyses. It presents themes from the FGDs, mobile-mentaries, key-informant interviews, and the module evaluation surveys. The bulk of the chapter presents the findings based on 5 Pillars of Social Change framework of evaluation, distinguishing values, knowledge, behaviours, service sustainability, and socio-political change. It also presents themes of how the community partners conceptualised co-design, the individual module case studies, and the community partner and youth's perspectives on programme uptake and future recommendations.

Chapter 5: Discussion

Chapter 5 discusses how the tested programme activated Pasifika youth to become agents of social change, and the research implications for healthy lifestyles promotion. It contains three foci:

(i) the tested programme and how co-design synergises with youth empowerment approaches;

(ii) evaluating the programme from a social change perspective and the social change concept developed, and;

(iii) programme uptake considerations.

Discussion I: The tested programme

The first objective of this research was to refine a Pasifika-specific health promotion programme and embed within it a model of co-design to support youth to become agents of social change. The programme was based on the YEP, and the model of co-design strived to answer the key question derived from the pilot research, how can youth envision and implement social action plans in their communities (14). First, this section discusses the synergies between youth empowerment and co-design programme components. Second, it introduces the key module of the programme, strengths of the model of co-design, and key insights from the community partner's conceptualisation of co-design for community-based research. It merges findings from analysis (i), the conceptualisation of co-design from the community partner's perspective, analysis (ii), the module case-studies, and analysis (iii) programme evaluation.

Synergising youth empowerment and co-design

This research determined that the tested programme offered a practical tool to embody multidimensional, social-change oriented goals of empowerment, proposed by scholars like Luttrell (92), Freire (91), Rappaport (94), Wallerstein and Bernstein (105) (106), and Zimmerman (95) (108) (96) through the utilisation of co-design. The empowerment component

increased the youth's knowledge about healthy lifestyles and their social change, leadership, and healthy lifestyles capacities. The model of co-design built a safe space and relational environment, harnessed the youth's insight into community change, and offered an outlet to translate empowerment outcomes into community change. It demonstrated that co-design is a complementary addition to empowerment programmes and that each component synergised to form an *"emergent"* programme, whereby, the whole was greater than the sum of its parts. Each individual module achieved outcomes that advanced empowerment objectives and established a strong foundation for the youth activating meaningful change in their communities through co-design.

There were three emergent links between the empowerment component and the model of co-design: relationships, capacities and capabilities, and motivation for activating meaningful change. First, the findings suggest that empowerment programmes bolster relationships between youth and community organisations as they journey through experiential activities together. Collaborative environments have been identified as essential for youth to initiate meaningful change (268) (269) (270) (271), and this research demonstrated how to cultivate them. It also substantiated that relationships established a robust base for co-design to occur.

Second, this research suggests that empowerment programmes and the model of co-design develop complementary capacities and capabilities of youth to advance social change in health. The empowerment component developed healthy lifestyle, social change, and leadership abilities, and the co-design component deepened these skills as the youth utilised them to co-design the community interventions, particularly around design-thinking, intellectual, and leadership skills.

Last, this research confirmed that the empowerment component increased the youth's motivation to participate in social change efforts in their community, and postulates that it deepened their engagement in the model of co-design. There is a growing body of literature suggesting that harnessing the passion and creativity of youth offers the opportunity to accelerate the progress of social change (197) (272) (273) (274), and the programme both increased the youth's enthusiasm for change and offered an outlet to transfer it into their communities through co-design.

Gift + Issue = Change: the key programme module

One module emerged as the seminal *"link"* between the empowerment component and the model of co-design, the *Gift + Issue = Change*. This module approached ideating social change from a strengths-based perspective and harnessed capacities developed from within the empowerment component, as a foundation to co-design the community interventions.

The **"gifts"** component instructed the youth to compile their leadership and healthy lifestyles skills developed both within the programme and outside of the programme. As a group, they determined how these skillsets can be utilised to improve health issues in their communities. It took a strengths-based approach, rooted in the youth's passions and interests. This is important, because when youth participants are invited to ideate their collective strengths in co-design, there is often greater innovation of the co-designed product (142) and the youth participants' self-efficacy, in turn, increases too (148) (275) (143) (146). No models of co-design to date, however, have contained a complimentary programme that also increases these strengths (e.g. the empowerment component).

The **“issues”** component ensured that the issues addressed within the co-design process were community-specific and relevant. Previous research has determined that Pasifika youth situate in a unique position within their communities: they perceive themselves as culturally adapted to mainstream modern society yet remain influenced by their traditional Pasifika culture (13). As such, they often bring a unique perspective regarding health issues within their communities. The model encouraged youth to share their personal experiences and insights into their community in a structured and safe way, building upon the relationships and collectivism outlined within the *Community contract* module and strengthened in the empowerment component of the programme. It encouraged the co-designed interventions to reach beyond one specific risk behaviour of prediabetes (i.e. poor nutrition) and utilised the youth’s strong understanding of the social-cultural barriers and enablers of healthy lifestyles for their communities. It connected to the *Root cause analysis* module and built upon the knowledge accrued throughout the empowerment modules on healthy lifestyles for Pasifika peoples, the Fonofale model of health, and health literacy.

The **“change”** component of the module encouraged youth to innovate ideas that adjourned their “gift” and “issue.” This component also introduced the notion of “social change” to the youth and examined the pillars of social change conceptualised within this thesis (i.e. the five pillars). The youth felt motivated as they connected their intervention ideas to a broader narrative of social change.

Other positive youth development and empowerment programmes outside of co-design also strive for young people to increase their capacity to initiate meaningful change (262) (92) (276). Essentially, they seek for youth to translate their knowledge into action (i.e. “agency”). A

fundamental component of agency in social change is *"having a voice"* (262) (277) (278) (279) and this module again, outlined a practical, pragmatic strategy for youth to have a voice in the ideation and direction of the intervention development. Providing space for youth voice is inherently a strengths-based approach and values traditionally underrepresented peoples in social change initiatives (124) (24) (21) (22) (25). The *Gift + Issue = Change* module provided space for youth voice and translating knowledge into action. The youth also utilised this formula outside of the model of co-design. The seven case studies that the youth developed and implemented in their communities suggest that the model has translational rigour. Youth assessed what skills they had and resources available to them (i.e. "gifts"); what issues they were passionate about and prevalent in their lives ("issues") and; context and; potential outlets for social change ("change"). Each case study targeted different barriers to healthy lifestyles and engaged a variety of "participants." This diversity reflects the interests, resources, and contexts unique to each participant.

Strengths of the developed model of co-design

What set this research apart was that it determined a practical, replicable model of co-design, specific for youth. The model enabled the youth groups to co-design two interventions to reduce prediabetes. Many existing interventions in health use "co-design" as a theoretical base, however, do not provide a specific method, nor develop any prototype to activate meaningful change (144) (151) (155) (21) (156). Interestingly, the model typified four of Rowe's design-thinking steps (1991): to empathise, define, ideate, and prototype (26), further demonstrating that

the tested model offered a practical operationalisation of co-design: the *Root-cause analysis* module connected to the empathise phase, however, extended beyond merely reframing the key issues and further identified and investigated the aetiology of health issues with the youth and communities; the *Gift + Issue = Change* module provided a framework that fulfilled the ideation component and approached idea development from a strengths-based approach; *the S.M.A.R.T. Goals* provided a framework for the iteration phase; and the *Seven steps* provided a framework for the prototype phase, to build off the previous modules and develop an implementable intervention.

This model also differed from the conventional NCD prevention approach that targets one specific, predetermined at-risk behaviour (e.g. dietary intake or physical activity) (280) (281) (282) (283) and garnered important insights into how best to utilise youth and community partners. First, this model verifies that public health initiatives garner success when they are determined by individuals within communities to address relevant, community-specific needs (115) (116) (117) (118) (119). It suggests that social change initiatives must incorporate self-determination for the participating communities to identify health issues and priorities. This is often termed as *"community individualisation,"* describing how co-design processes target specific problems, relevant to the lives of those involved (143) (152) (157). Within a Pasifika research setting, community individualisation must encompass cultural provisions and beliefs (152) (153) (154), and this model provided opportunities to account for the unique realities of each community context.

Second, this model corroborated the notion that youth can critically assess health issues and bring unique insight into social change discussions. Incorporating opportunities for youth-led

dialogue and discussions reverses traditional age-dependent power-hierarchies within social change efforts and is gaining momentum in modern youth empowerment strategies (284) (276) and co-design models (142) (143) (144) (145) (146) (147) (147) (148) (149). It confirms with the pilot studies that Pasifika youth are critical of their social realities and bring a unique perspective to social change processes (14) (13). Providing opportunities for youth participation also increased the youth's ownership of co-design process and improved group collectivism, building upon work by Ryan and Deci (2000) that self-determination increases motivation (285) and that co-design approaches are effective when they have high commitment from participants (152).

As well as utilising youth's insight, the model of co-design in this research also included opportunities to develop the youth's capacities and capabilities of initiating social change in their communities. The youth developed design-thinking capacities and capabilities that increased their strengths as individuals and as a wider group. Many youth stated that the "action planning model" was one of the key outcomes of the entire programme, categorised in this analysis within the behavioural change pillar.

Conceptualising co-design and implications for community-based settings

How the community partners conceptualised co-design provided insight into considerations and goals of co-design when implemented within community-based settings: co-design as a values-based process, collective decision-making, and empowerment.

Co-design as a values-based process

The community partners stated that for them, co-design is a values-based process, underpinned by the values of trust, mutualism, and open-mindedness. It was described as integral for the model of co-design because it allowed them to be authentic to who they were as organisations and leaders of Pasifika health. They explained that all co-design processes, especially those that engage with vulnerable peoples in their communities, must start with values. There must be shared values between all players in the research and that to share cultural values and worldviews; there must be strong relationships between all players. Other successful youth co-design approaches foster supportive environments (161) (149) (144) (151) (145) (142) (149) (157) and have a creative means for youth to contribute (147). Co-design approaches often involve consultation (143), identity and relationship building (148), or community partnership-building (153) (154), and this tested model provided modules to substantiate community-building objectives.

Importantly, this co-design model also allowed participants to share challenges they anticipated with participating in the process during the *Community contract* module (e.g. commitment, public speaking and sharing their ideas, or building new friendships). The discussion that the community facilitators led on how to best support one another to demonstrates that the youth's concerns were not insurmountable. It established values in which to operate during the model of co-design and the entire programme. This step deepened the participants' sense of collectivism, corroborating with resilience psychologist and researcher, Brown (2006) (286), who describes that vulnerability (i.e. sharing personal challenges) leads to more mutually empathic relationships. It also supports work of Paulus et al. (2012) on group processes that effective

group interactions involve high communication and that through disclosure; the *"self joins the group"* (p. 294) (287).

Collective decision-making

Collective decision-making substantiates that a core component of co-design is for communities to direct the narrative of the intervention. Collective decision-making engages all peoples in the co-design process and ensures that participants have an equal voice. In this research, collective decision-making was particularly important to capture the youth voice and leadership. It was underpinned by relationships, where all players felt valued and supported to share ideas and suggestions. This model confirmed that co-design approaches that take a bottom-up approach to develop health initiatives with community members, rather than aimed at communities, are more effective. They encourage cultural relevancy and include opportunities for collective-sharing and decision-making on issues that could be overlooked or misunderstood by health experts (22) (26) (27). It further demonstrates that the process of co-design is concerned with how things are done, rather than the outcome itself, and that relationship-building must precede co-design processes.

Empowerment

Last, the community partners expressed that a large part of their conceptualisation of co-design was empowerment. Conceptualising co-design as an empowering process aligns with two of the enduring components of empowerment: power and participation (102). To them, co-design takes a strengths-based approach that challenges the traditional role of youth as passive spectators in social action design processes (147). They recognised that youth have enormous potential to contribute to the development of the interventions, mainly through their rich insight about their communities and access to resources and people that were previously absent from the organisation's services. The community partners stated that it was empowering for youth to be given a voice to direct the intervention development and implementation. It substantiated that youth offer unique insight into community change (19) (142) (143) (144) (145) (146) (147) (147) (148) (149) and that involving youth in co-design increases youth's self-efficacy, engagement, and motivation to make a change (128) (148) (157). This conceptualisation also suggests that co-design and empowerment are inherently linked, both theoretically and practically. This research postulates that the key principle here is that both co-design and empowerment involve individuals and organisations advancing social change. The relationship and synergies between co-design and empowerment will be elaborated later within this chapter.

Programme and model of co-design summary and conclusions

This research designed and tested a practical, replicable model of co-design specific for youth. It provided a framework for youth to determine issues they wanted to affect, focus their ideas,

determine if their ideas were practical, anticipate challenges, and refine them for implementation. The tested model of co-design aligned with the empowerment approach and strengthened empowerment outcomes as it provided ways for youth to translate their gained capacities and passions into the community. It argues that co-design should not only take a strengths-based approach, but it should also contain opportunities to develop the strengths of youth, as did the empowerment component. The *Gift + Issues = Change* emerged as the key module to harness empowerment outcomes and ideate the preliminary interventions. It provided a framework that the youth could also apply outside of the model to positively affect issues in their communities using their strengths and capacities. The way co-design was conceptualised within the larger PPYEP substantiates many theoretical principles of co-design in a community-based setting, and emphasises that co-design is a values-based process that encompasses collective decision-making and empowerment. The tested model stimulates much potential for future research on embedding this model of co-design within youth and community-based settings that are well-suited to partnerships and collaborative projects.

Discussion II: Social change outcomes

The section component of Chapter 5 discusses the third objective of this research, evaluating the social change outcomes of the programme. It discusses the results from the deductive thematic analysis (iii) using the *"5 Pillars of Social Change"* framework to evaluate the empowerment component and the model of co-design as one larger entity. Since analysis (iii) used FGD and mobile-mentaries data that were collected at the end of the programme, this section elucidates the overall programme impact. Each pillar compares the findings with the youth empowerment literature reviewed within this research and discusses social change implications. Finally, this section elaborates upon the *"5 Pillars of Social Change"* framework and discusses a more nuanced concept of the process of social change that emerged during the analysis.

Pillar by pillar

Overall, the tested programme influenced each pillar at all three levels of the *"5 Pillars of Social Change"* framework:

(i) The **values** pillar encapsulated how the youth shifted their personal motivations to care about healthy lifestyles and to better their communities.

(ii) The **knowledge** pillar comprised youth's increase in knowledge about health, themselves, and leadership.

(iii) The **behaviour** pillar contained changes in the youth's individual actions around healthy lifestyles and community mobilisation. It contained the capacities learned and put into practice.

(iv) The **service sustainability** pillar described how the organisations changed to support the youth and the programme.

(v) The **socio-political** change pillar encapsulated how the programme contributed to the important discourse on shifting cultural norms of Pasifika health.

The programme had the greatest impact on the values, knowledge, and behavioural change pillars at the individual level. These pillars also exhibited the most synergies and together, established the foundation for Pasifika youth to become "agents of social change" in their broader communities. These were supported by changes within the community partners and contributed to changes in cultural norms in each community. The following sections discuss each pillar separately, based on the themes that emerged from the analyses. It focuses on why themes emerged, how they contribute to social change and any connections with the other

pillars. Some of the themes are identified as “primary” and others “secondary.” The primary themes and sub-themes appeared the most relevant or thought-provoking during the analysis and interpretation. This section discusses them in greater detail.

Values pillar

The values pillar encapsulated how the youth shifted their beliefs and personal motivations to hold values of both healthy lifestyles and contribute to bettering their communities. Three themes emerged within this pillar: “self-efficacy,” “relationships” and “collectivism,” and “cultural identity” (Table 17).

Table 17: Values pillar theme categorisation and summary

Primary theme(s) and * sub-themes	**Secondary theme(s) and * sub-themes**	**Level(s)**
Self-efficacy * Motivation * Self-confidence		Individual
Relationships & collectivism * Connection * Support * Empathy * Responsibility		Group
	Cultural identity * Strengthening Pasifika culture	Individual, group, community

Values pillar primary theme 1: Self-efficacy

In this research, self-efficacy was defined by how the youth valued themselves and their potential to contribute to social change and contained aspects of self-esteem and motivation. Self-efficacy was first described by Bandura (1968) as *"how well one can execute courses of action required to deal with prospective situations"* (99) (p. 122). Since then, “self-efficacy” has been used to describe one's perceived ability to overcome adversity and physiological stress, pursue achievement and personal growth, and make a meaningful change in their lives (288) (103). It is considered a core component of an individual’s sense of self (289) (288) (170). Self-efficacy as a value of social change characterises how youth shifted their attitude towards

personal growth and engendered confidence that they could influence their surroundings and create a meaningful difference in their communities. It was motivating for the youth to feel competent and worthy of contributing to social change, connecting to personal agency (103) and one's ability to exert control in their lives (95) (99). It allowed the youth to believe in their capacity to implement behavioural changes as individuals and as a wider group, connecting to Martínez et al's (2016) review that power is an enduring component of empowerment (102).

Self-efficacy is often conceptualised in empowerment (102) (103) (95) (99) (105) (91). However, it is rarely measured because it has a broad description and meaning. One promising definition was by Gullan et al. (2013), who conceptualised self-efficacy as the feeling that one can and wants to make a difference (170). This corroborates with the value of self-efficacy developed within this research, encapsulating both that an individual is capable of and motivated to contribute to social change. Other programmes have described self-efficacy with interchangeable components including the participant's attitudes of engaging in social action (14), their locus of control to influence change (171) (166), self-esteem (19) (165), and overall attitudes towards healthy lifestyles (165) (14). Despite nuanced differences in terminology and definition, a degree of self-efficacy consistently demonstrates a strong underpinning required for an empowered youth or an empowered group to affect change (16) (19). The common thread emphasised within this analysis is that the programme helped the participants improve their sense of agency and facilitated an understanding of how they can have a positive impact on their communities.

Values pillar primary theme 2 & 3: Relationships and collectivism

Relationships built a foundation of togetherness that united the youth to inspire change in their communities. Although relationship-building is a behaviour, relationships was thematised within this pillar because, in this research, it describes how the youth and community partners valued their connection and relationship. The value of relationships is particularly relevant in a Pasifika context because relationships encompass other Pasifika values of reciprocity, inclusion, and respect (290). Relationships uphold the Pasifika worldview that individuals are perceived in terms of "va," a cultural concept that there are relational spaces between people, their environment, and their communities (291) (121). To nurture the va is to respect and maintain sacred harmony within relationships and interactions with one another (292).

As the programme was delivered and the youth spent more time with one another and the community partners, relationships progressed into a sense of collectivism. Collectivism is conceptualised in this research as groups that emphasise cohesiveness amongst individuals and prioritise the group over the self. Collectivism captured how the youth assumed more responsibility for the wellbeing of their communities, suggesting that for effective engagement in social change efforts, a sense of togetherness and common purpose is important. Collectivism also instilled a sense of emergence where the whole (that is, the group in Tokoroa and Henderson) was greater than the sum of the individual parts (the individual youth), another motivating value for youth to engage with social change efforts. Collectivism is also important in a Pasifika context because it represents the Pasifika world-view that the unit of society is the community (159) (293), also connecting to the relational concept of the va (291) (121) (292).

Relationships and collectivism are typically measured in youth empowerment programmes by evaluating the social cohesion, social bonding, and group dynamics of relationships observed throughout the programmes (165) (128) (79) (105), often termed as *"collective efficacy."* Programmes with a measure of collective efficacy consistently conclude that positive social relationships and sense of group identity lead to greater programme uptake (165) (128) (79) (105). Programme uptake will be elaborated later in this chapter; however, within this programme, the highly relational space did more than improve uptake. It connected the participants to a common purpose of engaging with social change behaviours and can, therefore, be considered both an outcome of social change and enabler of social change.

Values pillar secondary theme 1: Cultural identity

Cultural identity encapsulated how the programme connected the youth to traditional, protective aspects of Pasifika worldviews and deepened their respect for their cultures. Although the programme was developed for and facilitated within a Pasifika-specific context, cultural identity was not one of the five original objectives of the programme and empowerment. Strengthening the youth's identity and affinity towards Pasifika culture was a welcomed outcome and has corroborated that cultural identity is an important goal of empowering programmes for Pasifika. Cultural identity as a value was formally defined in by Williams (1962) as the shared ideas about what a social collective considers as good and desirable and how individuals share a particular way of life (294). This definition was modified within the PPYEP. In our research, cultural identity was approached from a community-specific lens and acknowledged the diversity and unique experience of the youth in Tokoroa and Henderson. It better aligned with the Ministry of Social Development (MSD's) approach that cultural identity underpins one's sense of self and how they relate to others, contributing to one's overall wellbeing (295). A key determinant of

enhancing the cultural identity value was having Pasifika representation in how the programme was developed and facilitated. Relationally, the youth connected to the Pasifika programme facilitators and their shared experiences. It ensured that the programme was authentic to the communities and enabled rich conversations about cultural implications on health. The other component within this research was that cultural identity was self-identified by the youth and community partners. As the participants shared their experiences and co-created the content of the programme, the Pasifika-specific aspects of the programme emerged.

Cultural identity also expanded the youth's belief in their voice as a generation of young Pasifika. This was another motivating value for youth to engage with social change. As the youth felt proud of their cultures, they appreciated ways that Pasifika culture approaches wellbeing and enriches communities. In terms of health, this shifts the narrative of Pasifika from being "problematic" to people that deserve to experience equitable health in ways that align with their community values. Cultural identity within indigenous youth research to underpin elements of how people learn to be leaders and influences how individuals operate to drive change (289). However, it was difficult to contextualise the value of cultural identity with Pasifika programmes because there is scant literature on Pasifika youth empowerment programmes within a health or social change context. Of the works reviewed for this research, only one reference commented on the programme's influence on fostering "soundness in personal identity" from an ethnic identity perspective of Hispanic youth in the USA (170). While our results corroborate with their findings; however, they further suggest that soundness emerged as pride in one's identity: in this study, cultural identity was a strength. One discipline where cultural identity has facilitated advancements in engagement and developmental outcomes for Pasifika youth is in education. Recent research by Kiua (2019), Hunter & Bills (2015), and Hawk et al. (2002) suggest that

culturally responsive pedagogy is vital for Pasifika students to feel valued and culturally connected and that drawing on students' cultural backgrounds significantly engaged them in learning and participating within classroom settings (296) (297) (298).

Synergies between the levels

One of the unexpected outcomes of this evaluation was how the themes synergised amongst the different levels. Within this pillar, there were individual-to-group and group- to-community changes that progressed concurrently and emergently. Self-efficacy (i.e. individual value) laid the foundation for relationships (i.e. group value). As the youth felt better about themselves and what they could contribute to the group, they formed stronger relationships. The individual-to-group efficacy was also described by empowerment researchers Wallerstein et al. (105), who described that in their work, self-efficacy created a sense of purpose that united the wider group of youth participants to work towards a common purpose and encourage pro-social change behaviours to improve health disparities ethnic minority communities (105) (79). Furthermore, in this research, relationships encouraged the youth to connect more to the common purpose of advancing the health of their communities, fostering collectivism (i.e. community value), and exhibiting group-to-community level changes. As eloquently stated by Berg et al. (2009), self-efficacy underpins how participants *"develop a sense of collective empowerment concerning social action"* (128) (p. 365). In this study, collectivism manifested as the youth increased their motivation and enthusiasm to participate in the programme and engage as a group to inspire healthy lifestyles in their wider communities. There were also group-to-individual efficacy interactions. Fostering cultural identity (i.e. community value) and the sense of collectivism increased the youth's soundness in themselves and their position within the group and their

communities, increasing self-efficacy (i.e. individual value). This further motivated the youth to engage with one another and the programme.

Values pillar social change outcomes summary

This pillar analysis suggests that values have a foundational role in the youth's lives and have the potential to dictate lifelong changes and accelerate the pace of societal shifts towards healthy lifestyles and social action. The aggregate of self-efficacy, relationships and collectivism, and cultural identity increased the youth's motivation to improve the narrative and outcomes of Pasifika health. Self-efficacy gave meaning and volition to pro-health and social change behaviour; relationships and collectivism bonded the youth and fostered a sense of togetherness, which inspired the youth to feel part of a movement with collective strengths; and, cultural identity solidified the youth's respect for their Pasifika culture and groundedness in their identity.

Knowledge pillar

The knowledge pillar developed in two areas: (i) knowledge about health and (ii) knowledge about leadership. It contained three themes: "health literacy," "intellectual skills development," and "conceptualisation of leadership &self-awareness" (Table 18).

Table 18: Knowledge pillar theme categorisation and summary

Primary theme(s) and * sub-themes	Secondary theme(s) and * sub-themes	Level(s)
Health literacy * Prediabetes knowledge * Conceptualisation of health * Cultural, environmental, and social determinants of health * Food literacy		Individual
	Intellectual skills development * Analysing * Critical thinking	Individual
	Conceptualisation of leadership & self-awareness * Self-esteem	Individual

Knowledge pillar primary theme 1: Health literacy

Health literacy emerged as a primary theme within the knowledge pillar and was one of the most important outcomes of the entire programme. The New Zealand MOH has defined health literacy as *"the capacity to find, interpret and use information and health services to make effective decisions for health and wellbeing"* (299) (p. 1). For this study, the experience of health literacy aligned better with the WHO definition because it encompasses empowerment and describes how health literacy is only meaningful when it can be utilised effectively (300):

"More than being able to read pamphlets and successfully make appointments' by improving people's access to health information and their capacity to use it effectively, health literacy is critical to empowerment" (301) (p. 6).

Prediabetes knowledge

Health literacy established a solid foundation for youth to improve and inspire healthy lifestyles and contained knowledge of prediabetes, why it exists, Pasifika models of health, and food literacy. The youth's knowledge of prediabetes extended beyond the biomedical definition introduced at the beginning of the programme. The youth used critical thinking skills to generate a deep understanding of prediabetes for Pasifika and how health inequity is located within a broader context of interacting and interrelated systems in society. The five determinants of prediabetes that the youth ideated (i.e. environmental, social, and cultural, mental health, and lack of knowledge) align to prominent literature on the SDOH and ecological health theorisation (52) (264) (302) (303) (62):

Environmental: the youth described that the obesogenic environment perpetuated prediabetes and associated NCDs, aligning with Swinburn's original environmental model of obesity (44). The obesogenic environment for Pasifika is supported by demographic trends that Pasifika peoples live in more deprived geographic areas (62) with low access to green spaces and recreational facilities (304), low walkability, and food environments with a surplus of unhealthy and convenience food suppliers (305).

Social: the youth described the social determinants of health by one's socioeconomic status. The level of economic resources a family has is indisputably linked to conditions

or factors that support good health, including exposure to health risks, access to housing, access to and quality of health care services, and the potential to participate in protective healthy lifestyle behaviours (63) (64).

Cultural: the youth assessed traditional aspects of Pasifika culture that are risk factors for prediabetes, such as prioritising one's family over their personal health needs, Pasifika events and functions centre around unhealthy food, and the youth's perceived inability to instigate change out of respect for the older generation. The youth were also critically aware that culture also has protective factors for NCDs (13). Cultural implications will be elaborated on within the socio-political change pillar discussion.

Mental health: the youth appreciated that mental health connects to physical health. To date, no study has empirically demonstrated an observed relationship between stigmatising experiences of prediabetes and mental health symptoms. However, there is research exploring the impacts of obesity on mental health stating that obesity is connected to psychological distress and associated with more mental health symptoms, more negative body image, and more negative self-esteem (306) (307) (308). Often, mental health relates to feelings of powerlessness, a lack of resiliency, and inability to cope with "normal" life (258). The youth discussed that these not only decrease physical wellbeing but remove people from protective aspects of Pasifika culture, including feelings of belonging and strong social connection.

Lack of knowledge: has also been identified by the MOH (2008) as a contributor to NCDs and more specifically, a lack of access to comprehensive, culturally relevant health information, and for the older generation, that overcomes language barriers (309).

Conceptualisation of health

The youth's understanding of prediabetes demonstrates that effective health literacy advancement must incorporate opportunities for individuals to explore their experiences of health issues. More traditional approaches involve outside *"experts"* prescribing health inequities, which, are punitive (114). Such approaches, as described by Freudenberg's (1978), fail to have a significant impact on health behaviours because they are not health-promoting, nor do they involve the most relevant people (310). Involving the youth in discussions on why prediabetes persists within their communities moved them from a state of powerlessness to one of empowerment. It fulfils descriptions of several progressive health education including the works of Wallerstein & Bernstein (1988) (105) on empowerment education in health (91), Millstein & Sallis (2011) on building youth advocates for advancing obesity-related issues (275), Tremblay et al.'s social movement framework (2018) in CBPR diabetes prevention strategies (176), and Indigenous knowledge forms outlined by Harvey's review of evolving ways of knowledge in health (2009) (311). A large component of the knowledge of health gained on the programme pertained to the Pasifika model of health, *The Fonofale*. Youth ascertained that there are four interconnected and important *pou* of health and that the roof of "culture" shelters and preserves the foundation of *aiga* (family). Utilising the framework within the programme increased the youth's discourse to explore their experiences of health and culture. The changing conceptualisation of health at it extends to the socio-political change pillar will also be elaborated later in this chapter.

Food literacy

The last component of health literacy within this knowledge pillar was that the programme increased the youth's food literacy as they learned about diet, nutrition, cooking, and budgeting for a healthy lifestyle. Most food literacy definitions corroborate Vidgen and Gallegos' (2014) definition and include nutrition and a food skills component that *"support dietary resilience over time"* (p. 3) (312). Throughout the programme modules, the youth learned how to make healthy food choices while balancing multifaceted needs (e.g. nutrition, taste, hunger) with available resources (e.g. time, money, skills, equipment). By experiencing that they were able to effectively budget and cook according to their socioeconomic contexts, and youth gained capacities and confidence to shop economically. The youth also realised preparing and sharing food is a way to foster strong family relationships. It was empowering for youth to reconceptualise food preparation from a burden to a means of connecting with their family.

The definition of food literacy in this research also encapsulated cultural understandings of what food means for Pasifika families and how it functions within Pasifika communities. It went beyond merely teaching skills of diet and nutrition, but, ascertained that food literacy must meet the needs of one's health and cultural contexts (312) (299). A large component of generating translatable food literacy was in providing space for youth to critically assess the barriers to improving diet, nutrition, cooking, and budgeting for a healthier lifestyle in their family environments. Noticing and naming these barriers (i.e. cost of food and time involved in preparing healthy food) was an important step in ideating ways to overcome them. Many of the barriers the youth discussed were experienced by other minority populations (313) (314) (312) and involved context-specific strategies relevant to Pasifika communities. It further typified the

approach of health-promoting education and adjoined the experiential activities of cooking and budgeting with a discussion of their implications, noted in the pilot YEP study (14) as an effective way to engage Pasifika youth in advancing healthy lifestyles.

Knowledge pillar secondary theme 2: Intellectual skills development

The knowledge pillar also included changes in intellectual skills, understanding of leadership, and self-awareness. Although the modules contained healthy lifestyles material, the youth generated much of the content and discussion, as they shared their experiences and critically reflected upon questions posed by the facilitators. The programme did not "educate," but rather; it empowered the youth to engender wisdom about healthy lifestyles and health from a Pasifika lens. This process of knowledge generation exemplified Freire's pedagogy of education. In his first work, Pedagogy of the Oppressed (1970), Freire, discusses education as it relates to *"the oppressed"* (315). Although it would be harmful and disempowering to classify the youth participants as oppressed, there are important insights from Freire's work on educational development and, in particular, people gaining consciousness about their situation and efficacy to change it. Freire argues that models of education that take a *"banking model"* view those learning as *"empty banks,"* being filled with knowledge impression by the teacher; a model that dehumanises the student and urges them to accept content passively (315). He proposes a new model orientated around dialogue whereby the student plays an active role in generating content through reflection and articulation, where, ultimately, knowledge is co-created (315).

Education is a large focus of many other empowerment programmes and is one of the three unchanging and consistent components of empowerment theorisations (141). Of the reviewed literature, several youth empowerment programmes concluded that youth participants acquired

knowledge, capabilities, and awareness about health and community issues specific to the tested programme (219) (170) (171) (95) (168) (166) (128) (19) (165) (167) (14). Some youth empowerment programmes also evaluated testable knowledge (14) (219) (170) that the youth participants acquired. The knowledge pillar was less concerned with testable knowledge and more concerned about the process of critical reflection, and ways that the youth could describe their knowledge at the end of the programme.

The themes within this pillar suggest that effective youth empowerment programmes improve the participant's process of learning, similar to youth empowerment programmes studied by Pearrow (2008) (167) and Hagen et al. (2018) (142). That is, the process of learning within the empowerment programme, was highly engaging and participatory and enabled the youth to retain the content better. This research also suggests that in cultural settings, programme content is more effective when it considers the language, cultural provisions, and experiences of the participants. It aligns with Hunter and Bills' research on Pasifika student engagement (2015) (316) stating that when programmes cater to Pasifika students, the youth can extract deeper meaning from the material.

Knowledge pillar secondary theme 3 & 4: Conceptualisation of leadership and self-awareness

This research suggests that leadership is an important aspect of self-awareness when it is perceived as non-positional. The programme introduced the *"Social Change Model of Leadership"* (SCML) ideology that leadership is a process (79), and, therefore, was attainable to all participants. This concept of leadership is not analogous in Pasifika cultures. Culturally, leadership is linked to the hierarchy of a community, often influenced by the church and family

titles. The youth noted that their previous conceptualisation of leadership reduced their self-confidence because they did not fit this narrow perception of leadership. Instead, the youth learned that they each exhibit meaningful leadership qualities that can be used to advance social change in their communities. They also realised the wider implications of building teams with a diverse range of qualities, instilling the notion that as a group, they are stronger. In terms of leadership knowledge, the pilot YEP is the only programme that discussed the conceptualisation of leadership as a key outcome of the empowerment process (14). No other YEPs reviewed for this research discussed the changing conceptualisation of leadership, highlighting an emergent gap that this research fills. This will be elaborated within the socio-political change pillar discussion.

The youth's self-awareness also developed within this programme as they recognised the existing skillsets and resources they had outside of the programme. Self-awareness has been linked to positive outcomes of youth empowerment and development programmes (121) (57) (113). It is often a fundamental characteristic of *"thriving youth"* (317) because it leads to heightened self-esteem and a deepening sense of self-worth (318). Within this programme, self-awareness extended beyond an individual level as the youth realised they had strengths to offer the wider group that could contribute to positive change in their communities. It motivated them to further build upon their strengths and share them with their groups, and in turn, increasing the values of self-efficacy and collectivism.

Knowledge pillar social change outcomes summary

This pillar substantiates the knowledge base that must exist to inform behavioural change. It was fundamental for youth to gain a base knowledge of health (i.e. health issues, cultural models, and

health determinants) as well as their leadership potential for social change to advance. Together, these facets of knowledge enabled youth to not only gain a deeper understanding about healthy lifestyles and themselves, but also to, generate skills on "how" to critically assess their surroundings, navigate social contexts, and interpret meaning from experiences. As the youth learned about themselves, their strengths, and their positionality in their communities and mainstream New Zealand, they realised that they are well placed to affect it. This knowledge provided the "why" of healthy lifestyle behaviours in the process of social change.

Behaviour pillar

The behavioural change pillar comprised any changes in individual, group, or community action or activity. It focused not only on the capacities learned but rather, those put into practice. The behavioural change pillar contained three themes: “healthy lifestyles capacities,” “community mobilisation,” “leadership skills,” and “design-thinking skills” (Table 19).

Table 19: Behaviour pillar theme categorisation and summary

Primary theme(s) and * sub-themes	Secondary theme(s) and * sub-themes	Level(s)
Healthy lifestyles capacity Food agency * Mental health capacity *		Individual
Community mobilisation		Individual, group, community
	Leadership skills & Design-thinking skills	Individual, group

Behaviour pillar primary theme 1: Healthy lifestyles capacity

Healthy lifestyles capacity development was a primary outcome of the programme. It was thematised within the behavioural change pillar because its reach extended beyond just knowledge and awareness about healthy lifestyles, and went on to encompass the usage of these capacities and the uptake of pro-health behaviours. Previous research has shown that food and nutrition knowledge is important in increasing healthy food choices; however, youth often do not apply their knowledge due to low efficacy in their food literacy skills (319) (313) (320) (314) (321). This research evidences that the youth’s efficacy and motivation to act encourages the uptake pro-healthy choices and garnered insight into how knowledge translated into action in two areas: food agency and mental health capacities.

Food agency

Food agency is a concept that has roots in anthropological, sociological, and psychological theories of agency (279) (322) (323). It describes one's ability to procure and prepare food within the contexts of their social, physical, and economic environments (324) (325) (321). This research contained cooking and budgeting skills, with the motivation to act. Essentially, food agency typified the efficacy that moves food literacy into behavioural change. The youth described that the programme had shifted how they shop for and prepare food and that cooking has increased connectedness within their families and strengthened their Pasifika identity. It is an empowering concept: having agency over what you eat has wider implications beyond improving physical health. It demonstrates that when Pasifika youth can better navigate their food environments, they can influence other pillars of health too. It also suggests that effective healthy lifestyles skills-development programmes are more effective when they are coupled with programming that inspires the youth participants.

"Capacity development" and *"capacity building"* are seminal foci of other youth empowerment programmes within health (16); however, much of the existing body of literature leaves these terms unsubstantiated. Previous youth empowerment programmes that have measured the change in behaviours of healthy lifestyles focus on dietary intake and physical activity behaviours only (18) (166) (128), and less on broader health capacities learned and applied in real life. This is problematic because, from a food agency perspective, there are additional and complex factors influencing one's ability to shift dietary habits. This research suggests that learning how to cook and budget for a healthier lifestyle while accounting for the youth's socioeconomic constraints, is an effective way to build capacity and improve not only diet but

the youth's relationship with food. This is a more holistic approach that has demonstrated similar success within Indigenous youth interventions in health (326), the DPP and DPS diabetes prevention programmes (7) (9), and the pilot YEP (14).

Mental health capacity

Second, mental health capacities emerged within the behaviour change pillar, health capacity outcome. This research suggests that mental health is an important component of youth empowerment approaches within public health and argues that programmes must incorporate ways to develop specific, practical strategies with youth. This is particularly essential for Pasifika contexts because Pasifika youth experience a high prevalence of mental health challenges, yet they use mental health services less compared to all other New Zealand youth (38). The inclusion of the mental health module fulfilled a gap in healthy lifestyles capacities noted by participants in the pilot YEP, and the process in which the youth developed mental wellbeing strategies has major implications for effective youth mental health programming. Our programme approached mental health in an empowering way; the youth were active participants in determining relevant, individualised behavioural strategies to improve mental wellbeing. It also suggests that youth empowerment frameworks are effective contexts to incorporate mental wellness modules, particularly because of relationships. The mental health module was in part possible because of the safe space established early in the programme that encouraged the youth to share their mental health experiences and engender empathy and a deeper understanding of mental health amongst the wider group.

Several research analyses and strategic planning reports call for mental health interventions amongst youth with goals achieved in this study. In the most frequently cited academic article on

young people's mental health, Patel et al. (2007) describe that more research is urgently needed to improve the range of affordable and feasible interventions. They suggested investing in future research programmes that help young people connect to their families, friends, and their community and develop specific skills to make good decisions and take ownership over their health (327). In New Zealand, research also indicates that programmes sensitive to cultural differences are more effective than the "one size fits all" approach, particularly for Māori and Pasifika (258). Within a Pasifika context, the latest report on mental wellness for Pasifika people, *Te Kaveinga – Mental health and wellbeing of Pacific peoples (2018)*, stipulated that mental health promotion should prioritise programmes that unpack the experiences and identity of Pasifika youth (39). The latest strategy for Pacific health in New Zealand (2020), *Ola Manuia,* (328) (p. 23), outlines mental wellbeing as one of nine priorities and encourages culturally responsive approaches to improving mental wellbeing and resilience in Pasifika youth. Other mental health promotion and youth development reviews have produced sets of individual-level assets and attributes that are associated with positive youth development and mental wellbeing (329). The Centre for Addiction and Mental Health in Canada compiled one poignant list based on their review of global youth mental health strategies (2007) and recommend that programmes focus on: skill-building, empowerment, self-efficacy, individual resilience, and respect (330).

The tested programme operationalised these high-level strategies and demonstrated that youth empowerment contexts were valuable outlets to improve youth mental health, regardless of the specific objective of the empowerment programme. The mental health behavioural changes also developed concurrently throughout the modules and link to other values-based and knowledge social change outcomes of the programme. They stemmed from values of relationships, self-efficacy, and cultural identity. They translated knowledge from the youth's shifting

conceptualisation of health to recognise that mental health is a *pou* (i.e. pillar) of health and wellbeing. The youth cultivated resilience in the notion that they have the agency to improve their mental wellbeing, aligning to sentiments of empowerment discussed throughout the programme. Cumulatively, this contributed to the youth believing in their capacity to lead healthy lives and established a strong foundation to then contribute to their communities as well. It corroborates Patel's statement that addressing young people's mental health needs is crucial if they are to fulfil their potential and contribute fully to the development of their communities (327).

Behaviour pillar primary theme 2: Community mobilisation

Community mobilisation encapsulated youth translating their newfound values, knowledge and gained capacities into the community as they actioned initiatives to advance healthy lifestyles. It encompassed two components: the group community interventions co-designed within the programme and the individualised initiatives (termed in the results chapter as "case studies") implemented outside of the PPYEP. Although the co-design process comprised a large component of the programme, how the youth would mobilise their communities was indeterminate. The two group community interventions were community-specific and targeted issues that the youth identified.

Other youth empowerment programmes contain a component of community engagement, social action, or action planning analogous to the community mobilisation theme in this research:

(i) The pilot YEP (2017) developed two group "action plans" to target Pasifika-specific obesity-related issues focusing on raising awareness about healthy lifestyles (14);

(ii) The Whitefish First Nation Critical Youth Empowerment Programme by Kope et al. (2016) encouraged youth participants to design community action plans to resurge traditional Indigenous cultural initiatives including sports tournaments, craft, traditional healing, and youth events (127);

(iii) Wilson et al. (2008) developed four social action projects within the Youth Empowerment Solutions! (YES!) programme (331) including an awareness campaign, a bullying prevention strategy, an environmental clean-up project, and a campaign to improve school spirit;

(iv) Seven school-based health centres in California, reviewed by Ballonoff et al. (2006), facilitated programming for youth to co-develop and lead community health research projects (332).

Similar to our research, the impacts of these social action plans were omitted in the evaluations. Our research concerns the behavioural change resulting from the process of co-design and community mobilisation. This research took a similar approach to Kope et al. (2016), Wilson et al. (2008), and Ballonoff et al. (2006) in that all of the youth were empowered to participate in the development of the social action plans. These other programmes fall short, however, because they do not include examples of how the participants engaged with their community outside of the programmes. They are either omitted from the evaluations (95) (170) or, perhaps, were not achieved. In our study, the case studies that the youth initiated and implemented in their communities substantiates *"social action"* and demonstrates translational knowledge beyond the model of co-design. It substantiates that the skills and motivation developed within the programme extended into the participants' lives and that the empowerment outcomes were retained. This research connects community mobilisation to other pillars of social change. It

suggests that the success of the planning process was dependent on the knowledge, skills, and motivation of the youth involved. Specifically, it demonstrated that the youth's potential to mobilise their communities depended on the acquisition of leadership and design-thinking.

Behaviour pillar secondary themes 1& 2: Leadership skills and design-thinking skills

Leadership and design-thinking skills underpinned the youth's ability to mobilise their communities, evidenced within the model of co-design and the ways the youth engaged outside of the programme. This research argues that they are similar, however, that leadership skills should be distinguished from design-thinking skills. Leadership skills allowed the youth to motivate and guide others in social change initiatives. The youth strengthened their leadership skills through engaging in the interactive components of the modules, working in smaller teams and as a larger group, and overcoming challenges. In contrast, design thinking skills enabled them to ideate and implement specific social change initiatives and community action plans. The youth strengthened their design-thinking skills by participating in the model of co-design. The leadership skills development was an expected outcome of the programme based on the initial objectives and SCML development; however, design-thinking skills beyond those identified in the model of co-design were unanticipated. One novel design-thinking skills was *"visioning,"* conceptualised in this research as the youth's ability to envisage a new narrative of health for Pasifika peoples. Visioning demonstrated strategic thinking and exemplified the youth's aptitude for long-term and innovative social change. It was complemented by their other design-thinking skills and empowerment outcomes (i.e. conceptualising social change, intellectual skills development, and self-awareness, etc.). As the youth experienced that they can realise these visions, their self-efficacy and collectivism also increased.

Existing YEPs have determined that leadership skills are an important outcome of their programmes, but what set this programme apart, was that it determined which skills were actioned outside of the programme. Weak evaluations describe *"leadership behaviours"* (19) (170) (171) (219) with variance and vagueness in terms of specific capacities developed, and do not specify how they were utilised in practice. This research harmonised with stronger programme evaluations, that identified which leadership skills enabled the youth to carry out effective action planning, such as the pilot YEP (14) and others (16) (333) (331) (170) (168) (128). This research corroborated that leadership skills of open-mindedness, communication, and initiative allowed the youth to mobilise their communities and implement the co-designed interventions. This research supported more recent identification of *"leadership efficacy"* or *"civic efficacy"* (16) (333) (331), terminology that describes the process of youth using their leadership strengths to address their problems and find ways to change their communities.

Under a similar notion, there is also emerging research suggesting that leadership development is the strongest when experiential learning is coupled with a meaningful application (334) and that the most important aspect of leadership within YEPs is that they have outlets for actionable change into the community (263) (144). This was also observed within the tested programme, particularly as the youth participated in the empowerment modules. There were continuous opportunities for teamwork, communication, initiative, and problem-solving and as the youth completed the programme, leadership skills consistently emerged as a key outcome from the module evaluations. Design-thinking skills were even more prevalent in the co-design module evaluations. Leadership and design-thinking skills also connected to individual and group values of self-efficacy and collectivism. The youth developed leadership and design-thinking capacities

and shared the common goal of improving the health of their communities, feeling more capable as a group to utilise their skills and activate meaningful change initiatives.

Behavioural change pillar summary

This research argues that behavioural change is nested in a larger process of social change that is supported by values and knowledge. Healthy lifestyles capacity development translated the youth's knowledge and awareness about healthy lifestyles into pro-health behaviours. Through increasing specific leadership and design-thinking capacities and determining how to utilise one's strengths, the youth built their resources and ability to co-design social change initiatives within and outside of the programme. The youth translated other programme outcomes as they mobilised their communities in several community change initiatives.

Service sustainability pillar

The service sustainability pillar describes the programme's impact on SWPICS and The Fono's organisational goals, programmes, and service delivery. This pillar encapsulates the change that occurred within the service organisations because of co-hosting the programme. Within this pillar, two themes emerged: "increased capacity to engage with youth" and "health-service provider relationship" (Table 20).

Table 20: Service sustainability pillar theme categorisation and summary

Primary theme(s)	Secondary theme(s) and * sub-themes	Level(s)
Increased capacity to engage with youth		Group
	Health-service provider relationship * Partnership * Collective decision-making	Group

Service sustainability primary theme 1: Increased capacity to engage with youth

The primary change within the service sustainability pillar involved SWPICS and The Fono increasing their organisational capacity to engage with youth. The PPYEP encouraged each organisation to incorporate a more holistic approach to support and fund its youth, a service that was previously absent from their organisations. Zimmerman (2000), termed change within service organisations in a youth empowerment context as "organisational empowerment" (95). He described that organisational empowerment contains multiple processes that enhance skills, supports organisations to affect change, and strengthens intra- and inter-organisational networks (104) (335) (95) (96) (109) (110) (111). This research substantiates that a key organisational change that allowed the community partners to empower their youth was how the PPYEP

increased their capacity to engage with youth. Ill-prepared staff is often a limitation of research success (332) (127) (16) (284), necessitating strategies to build organisational capacity and support youth-based programmes and social change initiatives (108) (114) (336) (190). One of the more tangible components of organisational empowerment/ capacity development was the facilitation training offered to all staff at SWPICS and The Fono. The facilitation training increased the community partner's capacity to work with youth and aligned with high-level recommendations of the *"Pacific Health Progress"* national strategy. Namely, to develop the capacity of the existing workforce and create more supportive organisational environments (67). This was a positive change from previous research engagements with both SWPICS and The Fono that brought outside researchers in without developing the capacity of their organisations.

Other research also suggests that youth development benefits from adult mentors and facilitators whom young people engage with receiving ongoing training (15) (337) (127) (284) (332), a process that was achieved in the PPYEP through weekly support and development meetings. Maton and Salem (1995) describe that "empowering" organisations provide opportunities for members to take on meaningful roles and importantly, equip them to improve their communities best (338). This research suggests that the PPYEP encouraged SWPICS and The Fono to developed into empowering organisations that were situated to empower their youth.

In this research context, it was also important to have Pasifika community research facilitators to increase Pasifika representation and foster mutual understanding between the youth and the facilitators. Pasifika representation provided the youth with Pasifika mentorship and role modelled to them that there are engaged, skilled Pasifika peoples who are working to better the future wellbeing of their communities. Another important component of organisational youth

engagement was the non-hierarchical relationship between the facilitators and the youth that re-structured power in decision-making processes. Emerging research on youth leadership states that for youth to participate as leaders fully, adults must share decision-making and recognise that they must provide opportunities for youth to exercise leadership capacities properly (104). This research validates that organisations and adults can support youth in social change initiatives through building youth identity and supporting them through allyship (263). The community facilitators also demonstrated genuine care for each youth participants' empowerment, embodying the Pasifika concept of "va," the relational space between participants and facilitators. It corroborates the importance of building a trusting and working relationship with programme staff and youth participants (16) (339) (191), and this research elaborated that in a Pasifika context, a *"trusting"* and *"working"* relationship was underpinned by mutual understanding and engagement. The community facilitators participated as equal players during the modules, showing vulnerability and in turn, deepening their connection with the youth. This positioned the community research facilitators well to play an active role in the youths' development and wellbeing.

Last, organisational capacity to engage with youth also connected to the values pillar. As the organisations embedded the PPYEP into their services, there was a heightened sense of collectivism shared between the youth and the community partners. They were united by the common goal of advancing Pasifika health and did so with a foundation of togetherness. This was particularly apparent within the model of co-design.

Service sustainability secondary theme 1: Health service provider relationship

The health-service provider/researcher relationship extended from the values pillar to describe the relationships built between the wider research team and each community service organisation. It concerned two themes, partnership and collective decision-making. Partnership involved high levels of engagement and accountability from all stakeholders, and collective decision-making encouraged each organisation to customise the programme to suit their community contexts. The organisational and operational relationship within the PPYEP enabled each community partner to have agency in embedding the programme into their service delivery. Both partnership and collective-decision making were particularly relevant in the model of co-design. They ensured that the intervention was feasible and that it harnessed community strengths and focused on community-relevant issues. This is often termed as *"community individualisation"* (143) (152) (157). Visioning the direction of co-design through collective decision-making has shown success with other Māori (144) and Pasifika health co-design approaches (151). They are most effective when they provide opportunities to fit the cultural provisions and socio-economic realities for Pasifika peoples and align with the Pasifika views of health (152) (153) (154). What made this community partnership particularly novel, however, was that the programme also operationalised these visions. The community partners were involved in determining the pragmatic "how" the interventions would be delivered, were decided collectively.

The community partners claimed that this process deeply respected their knowledge and insight into their communities. The FONO and SWPICS stated that this type of relationship changed their vision of academia to one in which they could participate. This process of research differs

from previous experiences that are more rigid and hegemonic, often placed "onto" marginalised community organisations (105). It demonstrates that through high relationality, the research process can engender partnership and collective work with community organisations to better support youth.

Based on existing research, it is evident that while organisational contexts are important to support transformative programmes for youth (284) (16) (339) (191), organisational change is often is left undefined or omitted from YEP evaluations (331) (332). Other programmes reviewed in this research include an indicator of collaboration with youth and the community services (19) (163), participant satisfaction with organisational involvement (164), and the organisations attempt to influence public policy (95). These variables were all perceived for the youth participants perspective, however, and did not involve the organisations themselves. This gap is partially explained because YEPs often sit as independent entities, as opposed to embedded within organisational settings (e.g. partnerships with NGOs, schools, or service providers). It is also because many research evaluations focus on individual youth outcomes only. This research, therefore, was novel to include a multi-layered evaluation approach.

Service sustainability pillar summary

The service sustainability pillar captured how organisations play a supporting role in advancing social change through youth empowerment. This research suggests that substantiating organisational empowerment includes improving organisational capacity and building a service that engages with and embraces youth. It further suggests that for programmes to embed within existing organisations, a partnership must operate from a relationally supportive environment.

These are also both important considerations for the longevity and uptake of the programme and are elaborated on within the Uptake Analysis (iv) section of this chapter.

Socio-political change pillar

The socio-political change pillar describes the programme's impact on high-level cultural norms and community structures. It pertains to changes that support both youth being agents of change and the uptake of healthy lifestyles within the wider Pasifika communities. The socio-political change pillar contained one theme, "reconstructing traditional Pasifika cultural norms" (Table 21).

Table 21: Socio-political change pillar theme categorisation and summary

Primary theme(s) and * sub-themes	**Level(s)**
Reconstructing Pasifika cultural norms * Youth leadership * The conceptualisation of health and the de-stigmatisation of mental health	Individual, group, community

Reconstructing Pasifika cultural norms

Reconstructing Pasifika cultural norms occurred in two areas, youth leadership, and the conceptualisation of health/ the de-stigmatisation of mental health. Much of the reconstruction of traditional Pasifika cultural norms tied into the knowledge pillar as the youths thought critically about *"the way things were done"* (youth quotation) and assessed implications of traditional Pasifika culture on healthy lifestyles and youth leadership. This also applied to the socio-political pillar because it pertains to the meta influence of the youth's shifting beliefs on cultural norms within their communities. This pillar connects to the higher-level positionality of Pasifika youth in society. Most of the youth participants were New Zealand born Pacific-Islanders; a unique and unprecedented position in New Zealand society (13). One of the youth described this poignantly in her introduction during the programme: *"I am half Samoan, half Tongan, and full New Zealand."* The youth connected to their Pasifika culture and simultaneously participated in

mainstream New Zealand, identifying as Pasifika and calling New Zealand home. This duality typifies acculturation. Definitions and nuances of acculturation abound. However, the definition utilised in this research was described by Corral and Landrine: *"to leave one's indigenous cultural context to spend increasing time in an alternative"* (p. 737) (340). Acculturation implies fluidity as one spends more time in the "alternative" (i.e. modern New Zealand). Throughout the programme, the youth discussed the influences and implications of acculturation on their values, views of health, and potential to action social change in their communities. There were two sub-themes themes within this pillar: youth leadership and the conceptualisation of health/ the de-stigmatisation of mental health.

Youth leadership

Considering leadership in terms of Pasifika culture highlighted how traditional cultural beliefs influence how youth to exercise leadership in their communities. For Pasifika, identity and culture are important elements in how people acquire leadership roles. Positionality and traditional governance are central to both the socio-political organisation of society and family settings, often influencing how Pasifika communities make decisions and function as a collective (121) (341) (342). The youth described that they are often limited by traditional hierarchical dynamics of their families and communities and that there is apprehension to change from the older generation when it comes from the youth.

This research demonstrated that the programme helped re-shape the narrative of Pasifika youth leadership as the youth participants realised that they exhibit unique leadership potential. It focused less on positionality and more on empowering individuals to develop their skillsets to contribute positively to their communities. Although there are elements of leadership that are

steadfast within traditional Pasifika culture, the programme contributed to a more progressive conceptualisation of leadership that made leadership accessible to all participants. This research corroborates with other youth empowerment programmes that changing cultural norms and expectations regarding youth participation contests the communities' perception of youth and provides more opportunities for youth to practise leadership in other community affairs (263) (104) (343) (127). This was achieved through youth seeking leadership roles within their schools, churches, and families and through the community mobilisation initiatives.

This research also demonstrates that as the youth practised leadership within their communities, they confirmed their ability to catalyse social change and began to inspire adults, particularly in the intervention implementation. The community partners that youth leadership was as a major outcome of the programme and that the power of their youth leaders inspired them. They believe that the future of their communities depends on how their youth mobilise generational change. This is important because the Pasifika population is young and growing in comparison to all other ethnicities in New Zealand (36) and building a strong foundation of young Pasifika leaders could improve the future of Pasifika health and wellbeing. Pasifika youth leadership was also reinforced as the community health organisations reversed top-down power dynamics and nurtured the participants' leadership during the empowerment modules and the model of co-design. It contributed to increased individual and group values of self-efficacy and collectivism and reinforced the notion that Pasifika youth can contribute meaningfully to their communities.

Conceptualisation of health and the de-stigmatisation of mental health

Reconstructing Pasifika cultural norms occurred as youth shifted their conceptualisation of health and de-stigmatised mental health for Pasifika. The youth developed a more holistic perspective of health, informed by their increased knowledge of Pasifika traditions and how they have evolved, and The Fonofale model. The youth gained perspective on how Pasifika cultural norms have changed at the onset of migration to New Zealand and how acculturation continues to have negative consequences on Pasifika health outcomes (67) (340). It deepened their connection to their cultural identity and allowed them to appreciate the complex realities and implications for Pasifika health. This is important within the context of healthy lifestyles because it reduced shaming and blame and enabled the youth to celebrate the protective factors of Pasifika culture. Essentially, it moved the youth from feeling powerless to feeling empowered.

The other component of the changing conceptualisation of health involved the youth dissecting mental health issues experienced by Pasifika peoples to de-stigmatise mental health. Theoretically, the stigmatisation of mental health includes both public stereotypes, prejudice and discrimination (i.e. community stigma) and self-stigma that individuals place upon themselves (12). The stigmatisation of mental health is high amongst Pasifika (309) (39), and it perpetuates several misconceptions about mental health issues. Suicide, for example, is often seen as the ultimate rejection of one's family, and bereaving families experience a sense of failure for inadequately caring for and supporting their family member (344). Youth resonated with the disproportionate statistics of high Pasifika mental health issues and levels of psychological distress and stigmatisation in their communities (38). A key element of shifting this narrative was providing a culturally safe and supportive environment for youth to discuss personal

experiences of mental health and unravel cultural implications and inaccurate representations of mental illness within their communities. This theme surfaced throughout several modules and connected to the youth's vision of the future of Pasifika health. At the end of the programme, the youth were inspired by their potential to lead long-term change and reconceptualise norms of mental health and appreciated how this would have a large positive effect on wellbeing.

The socio-political change pillar was the most difficult to evaluate and contextualise with existing research. Based on the literature review, there were no programmes that explicitly evaluated *"socio-political change"* as an outcome within their evaluations. One programme evaluation described the context in which youth situated for making change through measuring *"climate"* (satisfaction, relationships, and meaning) and *"opportunity"* (resources, engagement, active learning, and social connection) (171), however, it did not describe how the programme influenced these outlets**.** Some reviewed programmes measured socio-political skills of creating an action plan and making a change (168) or described the youth's engagement to participate in political and social roles (169). The social norms of health were captured within this pillar. However, the analogous skills-based outcomes were thematised into different pillars (e.g. leadership skills and design-thinking skills fit within the behavioural pillar and engagement to participate in social action was described by the self-efficacy within the values pillar).

Some other YEPs have used the term *"socio-political control"* to describe an individual's beliefs about their capabilities in social and political systems (345). Socio-political control involves self-perception of one's ability to organise a group of people (346) as well as influence policy decisions (347). Socio-political control has been identified as a critical element of the intrapersonal component of empowerment (336) (57), often associated with one's critical

awareness and understanding of the socio-political environment and how to influence the socio-political sphere (275). Although socio-political control was not explicitly measured within this programme, the youth's perception of their ability to make a change, the awareness of their socio-political environments, and community organising skills did occur; they were thematised into the values, knowledge, and behavioural change pillars, respectively.

Socio-political change pillar summary

The socio-political change pillar encapsulated how the programme shifted cultural norms that reinforced advancements made in the programme concerning health and youth leadership. It evidenced that the programme contributes to shifting the narrative of Pasifika youth leadership potential to one where they play an active role in catalysing social change in their communities, and where the entire community reinforces this. This evaluation demonstrates that the youth's voice as a younger generation of Pasifika peoples is stronger, more resilient, and able to overcome adversity, supporting the rhetoric that social change involves youth.

Social change implications

This research led to a deeper understanding of the process of social change resulting from transformative youth programmes. The following section describes how the tested programme expanded how the framework defined and captured each pillar. First, it presents the process of social change concept derived from analysis (iii), and second, elaborates on each pillar and how it contributes to the interconnected, non-linear process of social change towards healthy lifestyles and youth leadership in Pasifika communities.

Process of social change concept

Most existing YEPs in health focus on behavioural change and the empowerment outcomes of the individual youth participant. In terms of youth being agents of change in their communities, empowerment is often conceptualised linearly and progressively, where empowered individuals create empowered groups and empowered groups comprise empowered communities. This evaluation suggests otherwise. From the thematic analysis, the pillars and levels were interconnected and non-linear. They represented a broader progression (i.e. process) of long-term social change (Figure 17).

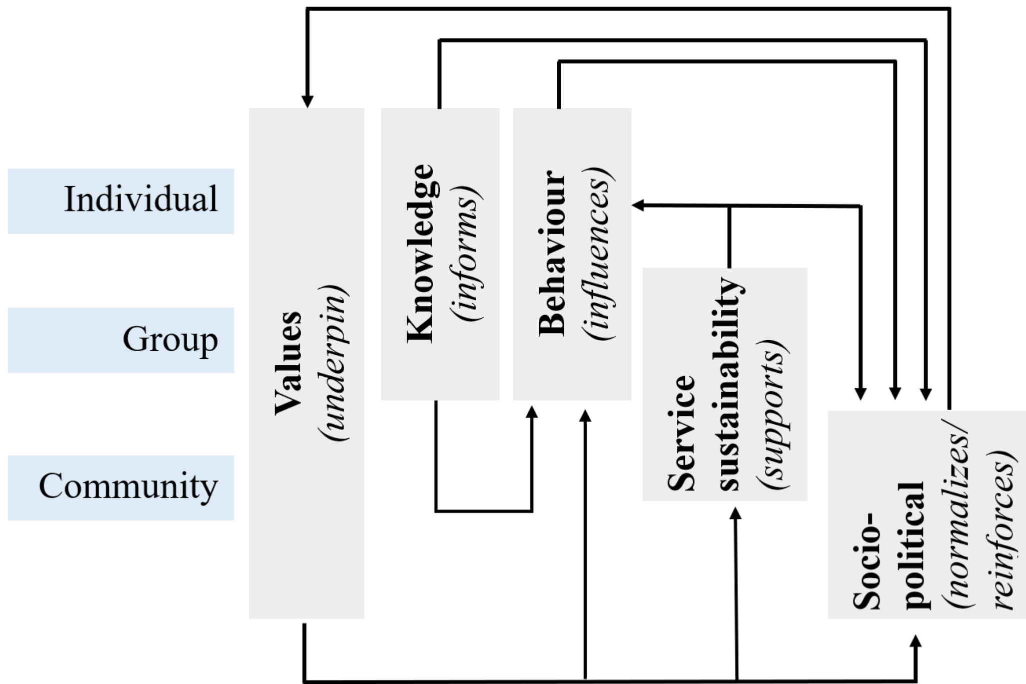


Figure 17: Process of social change concept

This research suggests that for individuals to make behavioural changes that support healthy lifestyles or social action, there are other reinforcing and supporting components. Under this conceptualisation:

(i) values underpin behaviours, how services operate, and the socio-political norms of society;
(ii) knowledge informs behaviours and socio-political change;
(iii) behavioural change influence socio-political change;
(iv) services support behavioural and socio-political change; and,
(v) socio-political change normalises and reinforces values, furthering the process of social change amongst the other pillars.

The concept also engenders insight on how change occurred throughout the different levels of Pasifika communities. Within this programme, the individual level of social change captured youth transformation and growth in their values, knowledge, and behaviours. The group level referred to two components: (i), the groups of youth in Tokoroa and Henderson and how their group values, knowledge, and behaviours evolved and; (ii), changes within SWPICS and The Fono from an organisational perspective. The community level encapsulated the shift in cultural values and socio-political changes within Tokoroa, Henderson, and the broader Pasifika community. The following sections discuss each pillar and its influence on the process of social change, as per this concept.

Values

Social change theory explicitly includes the progression value systems (69) (70) (78) (72) and this research corroborates that values laid an enduring foundation for the youth's engagement in social change and vision of health. Under this social change concept, values underpinned behaviours, how the service organisations operated, and the socio-political norms of the communities. Value-based social change outcomes also contributed to positive youth identity formation and united the groups and communities to work together to inspire healthy lifestyles. Essentially, they founded the *"why"* of the other pillars. This conceptualisation aligns with Barker and Rokeach's (1970) description of values as the foundation that directs an individual's behaviour (70) (78). They determined that individuals act in ways that allow them to express their important values and attain the goals underlying them (70) (78). This research suggests that these values can develop to provide individuals and communities with the propensity to advance healthy lifestyles and inspired values-based behaviours of leadership, health, and youth engagement with their communities.

For youth, developmental psychologist, Erikson (1968), evidenced that values are a core component of one's sense of self and a large determinant of identity (289). He pioneered a model of youth identity formation, stating that the ways youth establish a foundation of self dictates how one functions in society. This is important because it suggests that youth are a target age for transformative programming and that values nurtured during this age will have long-standing influence in their future direction. This concept also suggests that individual, group, and community values synergistically progress society in a particular direction. The youth values were reinforced by the community partners and began to shift cultural norms within each community, contributing to new cultural socio-political norms. Since cultural values are

persistent and steadfast in Pasifika communities, the values-based pillar was particularly relevant in this research context (348) (349). Taleni et al. (2018) describe values-based worldviews as Pasifika *"heart"* (341) and Huffer et Qalo (2004) affirm that Pasifika values and concepts guide individual and community interactions and nature of being (350). This research suggests that programmes designed to inspire social change in a Pasifika context must balance aligning existing Pasifika values and cultural provisions with advancing new values that provide the impetus for youth and communities to engage with healthy lifestyles promotion.

Knowledge

Under this social change concept, knowledge pertained to health issues, specific social-change skills, and knowledge of the self. Knowledge increased the youth's awareness of societal issues and informed their ideas to create change. It dictated their behaviours and community engagement, inspiring change within their communities and shifting the cultural norms of Pasifika youth leadership. Knowledge is particularly relevant to this research because education is the most constant theme of empowerment theorisation (96), encompassing the process of learning, acquiring knowledge, and developing skills and capabilities (17) (18).

In a social-change setting, this concept extends the traditional skills-based definition of education and suggest that programmes striving to advance social change must involve knowledge about how participants understand their potential to affect change. This includes becoming self-aware about one's strengths and place in society. Knowledge of the self draws upon work by development psychologist Kegan (1982) who described that the processes of becoming self-aware involve an individual moving from an uninformed consciousness to an informed consciousness (351). This allows an individual to examine their previous ways of

being and reorient one's self in a position to make a change (351). It connects to Freire's original conceptualisation of empowerment theory that one must have "consciousness" of their situation and, therefore, be equipped to change it (315). In this study, a heightened state of awareness and informed consciousness progressed as the youth became aware of their skills and group competencies. The programme concurrently developed these strengths, which, cumulatively, situated youth in a position to initiate change. In this context, change involved engaging with their communities and inspiring healthy lifestyles.

The ways knowledge developed in the programme also informs our understanding of knowledge-based social change strategies. It demonstrated that knowledge must be self-determined to ensure that it is relevant to the participants lives and, therefore, actionable. Popay et al. (1998) describe this relationship between health issues and agency (i.e. the ability to act) through the lens of *"lay knowledge"* (352). They discuss that lay knowledge brings an important perspective on the experience of health and illness at the individual and population level and are useful in the dialogue of how to affect change. Amplifying Pasifika understanding of health also addresses inequities experienced by Pasifika peoples in health promotion interventions, a progression of social change in itself. Public health organisations frequently declare the need for interventions to increase the basic health literacy amongst all citizens (301) (300). Health interventions without cultural safety, however, pose within minority groups that experience disproportional health outcomes and are often marginalised from mainstream society because of the lack of specificity and relevance their socioeconomic and cultural contexts (353) (354).

Last, this research corroborates that the narrative of knowledge through which people locate themselves in society determines how they will act upon that knowledge. Co-developing health

literacy knowledge reverses the power dynamics of traditional health literacy programmes that threaten prediabetes prevalence amongst Pasifika communities (309) and in turn, gives more voice to Pasifika and challenges steadfast inequities in health systems change. Co-creating knowledge aligns with progressive perspectives of empowerment education. Social-justice educator and academic, Banks, (1991) describes that the purpose of empowering education is for students (i.e. participants) to co-create knowledge and then to critically assess how this knowledge makes them powerful in terms of affecting social change (355). In a healthy lifestyle setting, this is particularly important. It ensures that youth are involved in critically assessing health issues (i.e. the determinants of prediabetes) and how this deeper understanding can inform long-term, sustainable behaviour and socio-political changes.

Behaviour

Under this social change concept, behaviours influenced socio-political change and exemplified one's values. Behavioural change is an important component of social change within health because, traditionally, health interventions focus greatly on behavioural change (356). There are multiple schools of thought in Behavioural Change Theory (BCT) in health, including "transtheoretical models" (357), "discovery learning" (358), "cogitative behavioural theory" (359), and "ecological theory" (360). These approaches, however, fall short because they focus on health-risk behaviours only, or the unalterable environment. This research substantiates the "empowerment theory" of behavioural change (361), grounded in the recognition that individuals sustain behaviours through knowledge and efficacy to be able to make informed choices. It suggests that behavioural change involves individuals and communities better navigating their environments and being supported in their efforts to make long-term, sustainable change. Empowerment approaches of behavioural change focus on the

transformative dimension of an individual, building off Martínez et al. (2016) definition of youth empowerment as the connection between critical reflection and meaningful action:

> *"Empowerment is the process by which adolescents develop the consciousness and skills necessary to envision social change and understand their role in that change."* (102) (p. 284)

In this social change concept, the youth translated their knowledge into behaviours through critical reflection and a deepened understanding of health issues and self-awareness of their positionality in advancing social change. It encompassed the progression of food literacy into food agency, knowledge about mental health into mental health capacities, and the conceptualisation of leadership into leadership skills. Sligo et Jameson (2005) (362) discuss barriers to the translation of knowledge into behaviours in health and coined the term, in the *"knowledge-behaviour-gap."* They propose two reasons why knowledge may not always result in behavioural change. First, one has inadequate knowledge/ awareness. Second, one has adequate awareness, but barriers exist that prevent people from acting on that knowledge/ awareness (362). This research suggests that adequate knowledge/awareness of health is important to reduce the knowledge-behaviour gap and, that when individuals discuss barriers to engage in pro-health behaviours, the gap also reduces. As discussed in the knowledge pillar, throughout the programme, the youth and community partners were challenged to discuss barriers to the uptake of healthy lifestyle behaviours, leading into a critical dialogue of how to overcome them. They co-created the programme content so that the knowledge/ awareness was comprehensive and relevant to their lives. This social change concept also suggests that the knowledge-behaviour gap lessened through value-based change and support from the service

organisations and socio-political norms of the community. The research demonstrated that values-based change supported one's intrinsic motivation and propensity to sustain a particular behaviour. Most often, intrinsic motivation is perceived as an individual experience (364); however, in this research, intrinsic motivating forces extended beyond the individual and were reinforced by group and community values. This was particularly important for Pasifika peoples since they are highly relational and operate as a community instead of a mere cluster of individuals. The youth's behaviours were encouraged and supported by the community partners throughout the programme modules and the community intervention implementation and by higher-level cultural norms (to be elaborated in the service sustainability and socio-political pillars below).

Service sustainability

This concept substantiates that service organisations play a supportive role in influencing behaviours and socio-political norms. Organisations have a longstanding role in advancing social movements (363) and advocating for systems change in health, often involving smaller groups like workplaces, NGOs', corporations, schools, and community groups (275) (176) (85) (87). This research explicates that service organisations contribute to social change by supporting youth and building collaborative partnerships with other stakeholders. Researchers Ginwright & James (2016) describe that for youth to engage with social change, organisations must inspire an organisational culture that *"embraces youth"* (263) (p. 35). This research substantiated ways for organisations to not only embrace youth culture but create an empowering culture for youth to take ownership and engage with their communities. As the community organisations supported their youth to develop skills and nurtured their leadership potential, it reinforced youth's

behavioural and value-based changes of healthy lifestyles, leadership, and individual and collective efficacy to engage with social change.

The broader PPYEP also displayed that an effective way to stimulate social change within communities is through partnerships. Both community partners introduced a new programme to their services through connecting with the PPYEP, synergising existing strengths and offering new ways of innovating their youth development strategies. The partnership operationalised organisational goals and built capacity to achieve them. This social change concept also demonstrated that organisations play a role in social change by embodying socio-political norms within the wider community. This concept postulates that community organisations can support how society values its youth and their potential embody the role of *"change agent"* in their communities. As young people act to initiate change on the root causes of social problems, they either face opposition or are supported by organisations and the wider community. In the later, they demonstrate to themselves and others that they have an active role to play in influencing society and are more likely to pursue engagement in social change and be supported in doing so.

Socio-political change

Under this social change concept, the socio-political pillar pertained to changes in cultural norms that normalised values, behaviours, and social organisations regarding Pasifika youth leadership and healthy lifestyles. This research demonstrated that there are synergies between the socio-political pillar and the values, knowledge, and behavioural pillars too. It suggests that behaviours, when done repeatedly and congruent to one's values, become "normal" and contribute to the evolution of social norms. In this context, such social norms are sustaining Pasifika youth leadership and healthy lifestyles. This process involves empowered individual,

groups, and communities shifting social structures that will eventually shape the structural environment of a place, which, further perpetuates opportunities for sustaining certain behaviours (364).

Socio-political change also connected to the knowledge pillar as the socio-political landscape of a place was influenced by how the youth and community partners construct knowledge and perceive it. Community development scholar, Weyman (1996), describes that there is an immense value of local knowledge in the process of social change. He describes that the narratives for what people do and why he argues are a product of daily experiences that are influenced by beliefs and values that evolve within communities (i.e. socio-cultural norms) (365). It emphasises the reciprocal relationship between knowledge creation and socio-cultural norms and that self-determination is important to both understand existing contexts and co-create new knowledge to inform values, beliefs, and the social landscape of a place.

Levels of social change

This concept also suggests that social change involves three interconnected levels to advance healthy lifestyles and encourage Pasifika youth to lead social change efforts. Most existing YEPs focus on empowerment outcomes on the individual youth participant level. Theoretically, empowerment at the individual level of analysis includes beliefs about one's competence, efforts to exert control, and understanding of the socio-political environment as well as increased self-esteem (95) (99) (105) (91). This is also defined as *"psychological empowerment,"* the changes in one's knowledge about the world and their perception of themselves to affect their lives (95) (108) (96) (366). These research findings corroborate that youth empowerment influences have the greatest impact on individual youth participants, however, also acknowledges that individual

outcomes are supported by, and influence group and community level change too. This social change concept acknowledges the importance of the community partners in supporting the programme and the individual youth participants, and how cultural norms developed within each community.

Ultimately, this concept corroborates that social change is a cyclical mechanism with interactions between individuals and high-level aspects of society. It aligns with work by Barker et Rokeach (1975) and suggests that socio-political norms and individual values are both subjective and influenced by culture (367). This concept has two mechanisms of influence: (i) individual to the community, and (ii) community to the individual. Individual to community change has been described by social psychologists who perceive that individuals situate as a unit in collective action (368). They believe that individual human agency, collectively, challenges the status quo and mobilises an alternative (369). In the other direction, culture is perceived to influence the units within it, showing that cultural norms and practices influence the thoughts and actions of individuals (370). It states that institutionalised norms and structures of society influence the daily practices of individuals and organisations (371) (372).

This social change concept provides a pragmatic lens and encouraging way of conceptualising social change because it is less focused on theoretic nuances and more on how individuals and communities, together, progress society in a particular direction. These individual and collective interactions within other social movements have shaped the socio-political landscape of society and reinforced individual beliefs, values, and behaviours. Notable examples include the first and second waves of feminism (373), climate change activism (374) (84) (375), and ethical consumption (376). This research suggests empowerment programmes are a promising way to

influence both individual and community *"units"* of social change in a Pasifika health setting too. This pillar connects individual action to a higher level of influence, ultimately suggesting that the social composition of society is shaped by empowered individuals, groups, and communities.

Social change outcomes summary and conclusions

The *"5 Pillars of Social Change"* framework of evaluation provided a holistic method to capture multidimensional elements of empowerment and how they contributed to social change. Each pillar and level have been studied in other YEPs; however, none have created a conceptual framework of evaluation, nor a practical tool for evaluation. This evaluation determined that the uptake of healthy lifestyles and youth being agents of social change encompasses more than an individual change of youth's behaviours. The tested programme influenced the values and knowledge of individual youth to encourage behaviours of social change. It also involved community organisations in supporting youth mobilising their communities and suggests that cumulatively, these pillars contribute to a progression of cultural values and social norms. It is predicted that these changes will become engrained in the fabric of the partnering Pasifika community's society, forming new collective identity, defined here as the shared definition of a group that derives from common interests, values, and beliefs (377).

This evaluation also informed a process of social change concept of how each pillar of social change interacts to support long-term, sustainable change towards healthy lifestyles driven by youth.

Discussion III: Programme uptake

The fourth objective of this research was to explicate the contextual considerations for programme uptake. Overall, the programme uptake in this research was high. Both community organisations successfully embedded the programme within their organisations, trained co-facilitators, recruited youth participants, co-delivered the programme modules, and conducted the evaluation. This section garners more specific contextual considerations for programme uptake at the community level and from the youth's perspective. First, it describes and interprets the programme uptake criteria from an organisational perspective, shedding light on how to embed youth empowerment programmes and co-design into community settings. Second, it discusses participant retention and programme satisfaction scores as well as insight from the youth participants. Last, it explicates uptake considerations for the model of co-design.

Embedding the programme at the community level

The programme uptake from the community partner's perspective was analysed, and three programme uptake enabling factors emerged:

(i) service alignment,

(ii) community context,

(iii) and harnessing youth potential.

Cumulatively, these themes enabled the PPYEP to exist within the community partner's organisations and implicate future CBPR partnerships and research design. Service alignment

ensured that the programme matched with the values and vision of both community organisations, facilitating a straightforward integration within their existing services. It also meant that the organisations were supportive of the programme and had a vested interest in its development and success. The programme enhanced the community partner's Pasifika-specific approach to healthy lifestyles, and they were empowered to contribute to the direction of the programme to suit the contexts of their communities, which created a more cohesive, integrated project, rather than an *"us"* and *"them"* research collaboration.

The organisations also supported the programme because it matched the community contexts of Tokoroa and Henderson. The programme fits with the youthful Pasifika demographics and the broader agenda for Pasifika health, improving NCDs. It addressed a pertinent and topical issue for their communities, prediabetes, in ways that expanded upon their values and provided a new, innovative approach for harnessing youth. This was particularly relevant for the model of co-design uptake. The programme also had high uptake because of its focus and ability to harnessing youth potential. Before the PPYEP, neither organisation had a youth-specific empowerment programme within their services, an appealing prospect of the wider PPYEP partnership. The community partners believed that the programme tapped into the youth's ability to mobilise their communities. They recognised that this programme was unique in that captured the youth's skillsets and networks to co-design the community interventions and laid a strong foundation for the youth to uptake healthy lifestyle and leadership behaviours.

Model of co-design uptake criteria

The youth and community partners were also asked a series of questions in the FGD and one on one interviews about uptake enablers and challenges for the model of co-design. The findings

highlighted criteria for embedding youth-focused models of co-design within community-based partnerships and empowerment programmes. Overall, the model of co-design:

(i) is used to co-design relevant interventions and adapts to fit the cultural provisions of each community;

(ii) incorporates opportunities to build health capacities and capabilities within the partnering organisations;

(iii) supports youth collective decision-making; and

(iv) has clear expectations about the objectives of the co-design process.

The model had high uptake because it focused on addressing prediabetes amongst Pasifika adults, a priority for both community partners. This research determined that models of co-design must allow room for adaptability to account for unique cultural contexts. It emphasises that any predetermined parameters or goals of the co-design model should be negotiated with each community, i.e. community individualisation. Negotiating parameters of the interventions was more relevant in heterogeneous community contexts (i.e. Henderson) with diverse cultural provisions and considerations. The community partners also suggested that the model of co-design should include more opportunities to build health capacities and capabilities of the partnering organisations to support the interventions better. This was particularly important in Tokoroa because their organisation is often limited due to lack of access and rurality.

From the youth's perspective, the co-design uptake depended on the model encouraging collective decision-making to triage the youth's ideas and decide upon one intervention to progress. It harnessed the relational elements of group dynamics engendered in the earlier modules to work as a team instead of individuals and facilitated a smoother decision-making

process. It was also imperative for the goals and parameters of the model to be well communicated at the beginning of the co-design process, particularly with the structure of the intervention (i.e. developing one group intervention amongst all youth). Again, these are particularly relevant in communities with greater heterogeneity (i.e. Henderson in this research context) as there is typically less consensus and more perspectives involved.

Programme satisfaction

This programme had high satisfaction amongst both communities. High programme satisfaction was substantiated by the high evaluation survey results where the mean Likert-scores consistently ranged within the highest score point (4.6-5) with low +/-SD (0.18-0.61). These scores were higher than other YEP satisfaction evaluations that employed similar Likert scales (219) (164) (17). Additionally, the programme uptake analysis substantiated three elements that led to high programme uptake and satisfaction from the youth's perspective:

(i) relationships;
(ii) engaging programming style; and
(iii) skills-based modules.

These themes implicate future translations of the programme and the development of new youth empowerment and co-design health interventions. Relationships have already been discussed as a major outcome of the programme and value for social change, and this research also demonstrated that relationships were an important factor in programme satisfaction. The youth built deep relationships with one another, the community partners, and the research facilitators, which increased their engagement and enjoyment with the programme. The youth's relationships

strengthened as the modules progressed, and the youth shared their ideas, worked through challenges, and fostered teamwork amongst the groups. The programming style was highly engaging and participatory, making the modules fun. The youth discussed how the programme content was understandable and facilitated in ways that enhanced their learning outcomes. They emphasised that the facilitators encouraged a safe environment for the youth to ask questions and gain a deeper understanding of the topic. They also appreciated having dynamic facilitators that were knowledgeable and could explain health issues clearly. The programme style was different from typical health educational settings they previously engaged with, primarily in school and church settings. The youth engaged best with the modules that were skills-based, such as the *Community cooking* and *Navigating a supermarket.* They preferred the capacity-building modules that were interactive and participatory, corroborating that the style of programming is apt for youth and unlike other health promotion interventions.

Participant retention

This research suggests that the retention of 71% (N=29/41) from the tested programme was high. It was one participant shy of achieving the target sample, and, importantly, six of the 12 youth that left the programme justified their discontinuation with reasons external to programme satisfaction or structure. These youth moved cities or acquired new family obligations and should not be a proxy of programme satisfaction or quality. This research also determined that the retention of 71% was high compared to other youth empowerment programmes with similar structures and objectives. Contextualising the programme's retention rate of 71% with other programmes was a difficult task; however, because other youth empowerment programmes often situate within existing school programmes (and therefore, are a mandatory component of the

curriculum) or extra-curricular settings that have poor evaluation strategies (332) (128). Further, there were no meta-analyses or systematic reviews of empowerment programme retention within any discipline to reference, and, of the reviewed YEPs, only four presented retention. The retention rates ranged from 96 % (17), 88% (170), 72% (168), and 59% (172), respectively. None of the other interventions included a measure of retention (171) (169) (219) (167) (165) (164) (18) (16) (127) (14). There is a compelling argument that they did not disclose their programme retention because they were low, or they wanted to protect their programmes and avoid exposing any issues with their research methodology or programme quality. Comparing this study to the retention rates of 96% and 88% is misleading, however, because of the difference in incentivisation for the youth participants. In Heinert et al.'s programme (2019), with a retention of 96%, the youth were compensated with a $1000 stipend (17), and in Gullan et al.'s programme (2013), with a retention of 88%, the youth were offered occupational training and work placements (170). This programme is better contextualised with Roberts-Gray et al.'s programme (1999), where our study superseded their retention of 59% and with. Batista et al.'s programme (2018), who concluded that their retention of 72% was high (168).

Demographic variables of programme sample and retention

This research investigated the demographic composition of the sample and the youth's perspective on challenges with participating in the programme to determine considerations for maximising uptake for future programme adaptations. With the small sample, no statistical tests were performed beyond descriptive statistics; however, there were notable differences in retention based on the sample location and participant age. The rural location (i.e. Tokoroa) had higher retention (78%), associated with homogenous community composition and ethnicity and younger aged participants. The rural geography of Tokoroa and small proximity meant that

getting to the programme was not time-consuming and transportation was provided to the youth, which likely contributed to higher retention. The participants also had greater ethnic homogeneity, with most being Cook Island, and had similar life circumstances. All went to one of two high schools, attended the same church, and had similar obligations outside of the PPYEP. As such, the programme schedule could account for conflicting community events (i.e. community funeral, school events, etc.). The youth were also younger (mean age of 16.03 years) and had less university and family obligations. Comparatively, in Henderson, the retention was slightly lower (65%), and the group had a more diffuse community composition with greater ethnic diversity and less homogeneity and older-aged participants. Moreover, within each Samoan, Tongan and Tuvaluan Pasifika ethnicity, youth belonged to different church communities, and it was more difficult to adapt the programme schedule to a range of conflicting events. The urban environment was also busier and more geographically dispersed. Transportation was not provided because of feasibility, which provided an additional barrier for attendance. The Henderson youth were also older (mean age of 17.78 years), with many participants attending their final years of college and university programmes and holding more family obligations. Notably, most of the participant drop-off within the Henderson group occurred at the end of the programme during the last co-design modules, programme, corresponding with school exams.

The other demographic difference between participants that were retained in the programme was gender. Female participants had higher retention (76%) compared to male participants (58%); however, the impact of gender on retention is misleading because it was largely impacted by the initial convenience sampling, where females comprised 71% of the initial sample. Comparing the proportion of female to male participants at the beginning of the programme to the end, the

differences in gender were small. Females comprised 71% compared to 76%, and 29% compared to 24% for males, respectively. This finding suggests that females are more inclined to participate in the research programme and were easier to recruit; however, that the programme had similar uptake and engagement between both genders.

Last, there was also one important distinction within the knowledge translation component of social change analysis that corroborates demographic differences between Henderson and Tokoroa. The Henderson youth displayed more translational knowledge as they initiated more of the "case studies" in their communities, independent of the programme. Alternatively, the Tokoroa youth were more engaged with the implementation of the co-designed community intervention and functioned better as one larger group. This subtle difference suggests that programmes designed to empower groups of youth are better situated for more socially cohesive communities (i.e. rural locations with high homogeneity), and those designed to achieve individual youth outcomes are better suited for communities with greater diversity (i.e. urban locations with high heterogeneity).

Youth perspective on challenges and retention

In the FGD, the youth participants were asked about their perspectives on challenges with participating in the programme that highlight implications for improving retention in future programmes. This research suggests that these challenges did not implicate the overall programme retention or outcomes because the youth participating in the FGD completed the programme and, therefore, they were not insurmountable. Rather, they should be considered when developing future iterations of this programme to improve the participant's experience. There were three themes:

(i) socialisation and building new relationships,

(ii) unclear expectations, and

(iii) time commitment.

Socialisation was more of a barrier at the beginning of the programme and decreased as the youth developed relationships and strengthened them as the programme progressed. It was also more of a challenge during the modules that encouraged the youth to share personal experiences and required a level of vulnerability, such as the *Mental health and wellness* module. This theme was heightened in Henderson as many of the youth had no pre-existing relationships upon starting the programme. In Tokoroa, the youth knew one another before the PPYEP; however, this also meant that some of the participants had negative preconceived notions of one another that needed to be addressed in the programme to maximise engagement from all participants. The *Community contract* module provided a safe space to achieve this.

Unclear expectations pertained to the purpose and duration of the programme. The length and schedule of the programme were not predetermined because of the nature of co-design and that the programme was adapted to each community context. The overarching programme objectives and the initial schedule was included in the consent forms, which all participants completed. However, the community intervention development and intervention phase were not explicitly outlined, as the plan was co-designed in the programme. For some youth, this was not a barrier. For others, it made planning their lives outside of the programme difficult. Unclear expectations were more evident in the Henderson group, where the youth had a more diverse range of obligations and appointments outside of the PPYEP, as aforementioned.

Programme uptake summary and conclusions

The programme had high uptake and satisfaction in comparison to similar existing youth empowerment programmes, with low attrition bias. The programme retention was higher within the rural location with less ethnic diversity, greater homogeneity, and younger participants. This finding suggests that programmes comparable to the PPYEP are better integrated into the structure and function of smaller communities with greater community composition and younger aged youth. This research also suggests that within more diverse, urban environments, the programme influences the individual youth participants more than the group as a collective unit. Identifying the barriers and enablers of programme uptake established a strong foundation to understand the limitations and considerations on how to create tangible, realistic, and sustainable change towards healthy lifestyles within different Pasifika community contexts. Overall, the programme requirements are summarised by the following "criteria:"

(i) the programme aligns with the service organisational values and vision and is integrated within the organisation;

(ii) is adapted to each community context;

(iii) harnessed youth potential and develops capacities and capabilities of the youth;

(iv) has highly engaging, participatory modules;

(v) includes ways to build relationships between the youth early in the programme;

(vi) has clear expectations with participants and is delivered at a convenient time.

For the model of co-design specifically, uptake criteria include:

(i) is used to co-design relevant interventions and adapts to fit the cultural provisions of each community;

(ii) incorporates opportunities to build health capacities and capabilities within any partnering organisations;

(iii) supports youth collective decision-making; and

(iv) has clear expectations about the objective of the co-design process.

Discussion IV: Research design

This section describes the strengths, limitations, and future directions of this research.

Research strengths

There were three notable strengths of this research: (i) how the tested programme fits within a Pasifika, community-based context; (ii) how the programme actualised the current high-level strategic direction of Pasifika health in New Zealand; and (iii) the evaluation process employed.

Fitting within a Pasifika, community-based context

First, the research methods employed were Pasifika-specific and community-centred. The research design was values-based and emphasised relationships between the researchers and both community partners. The PPYEP was only possible because of years of building rapport with two community service organisations, and the research design strived to uphold these relationships along with Pasifika values of reciprocity, holism, and respect. The highly relational space allowed the programme to be integrated and embedded at the community level and utilise social capital and rapport within SWPICS and The Fono. The programme was also Pasifika-specific in terms of programme content and the way the programme was co-delivered. The base set of Pasifika empowerment modules derived from the pilot YEP (14) and the refined programme incorporated Pasifika worldviews (e.g. The Fonofale model (61)); the programme was embedded within two Pasifika community organisations; and, it was co-delivered by

Pasifika community research facilitators. Pasifika representation throughout the entire research process provided a means of Pasifika researcher capacity-building and decolonising research methods in public health (235). Importantly, it also demonstrated to the youth participants that there is space for Pasifika peoples in efforts to advance health and social change.

Second, the CPBR methodology was effective within this research because it was community-centred. The research design was less rigid and hegemonic and involved community input in all decision-making. The research design increased ownership and potential for the programme to advance community strengths. Community input also asserted that the health knowledge and experiences of a community should come from those within it (378) (379) (178) and that people are capable of making a change in their lives, given their reflections and contributions (380). This research supported the core principle of CBPR that communities must participate in the dialogue to the *"whys of their lives, inviting them to critically examine the sources and implications of their knowledge"* (381) (p. 86). This was particularly evident during the model of co-design, where the youth and community health service organisations individualised the intervention ideation and development processes. The CBPR methodologies also aligned with the overarching goal of the PPYEP, to inform meaningful social change (119) (379) (215) (141) (211) (179). In particular, CBPR in a youth context (207) (382) (182) aligned with the research objective of developing youth as agents of social change to improve the health of their communities.

The programme operationalised the current high-level strategies for advancing Pasifika health

The programme operationalised many high-level goals and strategic directions for prediabetes prevention, Pasifika peoples, youth, and health in New Zealand. Beyond the reports mentioned within Chapter 2, this programme aligned with the most recent Pasifika health and wellbeing strategic action plan that was published by the MOH near the end of this research, *"Ola Manuia"* (2020) (328). The strategy acknowledges that Pasifika peoples hold unique worldviews and explicates that one of the nine key focus areas is to *"empower Pacific peoples with the knowledge and skills to manage their own and their families' health and wellbeing"* (p. 27). Another outcome is to *"improve Pacific youth wellbeing, with a focus on building self-esteem and resilience"* (p. 35). Last, the report declares that one of the five systems enablers of improving Pasifika health is *"organisational and infrastructure capacity development"* (p. 35). Evidently, the objectives of the tested programme align with those of *Ola Manuia.* This research demonstrates that the tested programme improved Pasifika youth wellbeing, building self-esteem and resilience, increasing health knowledge, and increasing organisational capacity to co-deliver healthy lifestyles-based interventions.

Outside of a health context, this programme achieved objectives outlined by the Department of the Prime Minister and Cabinet in the most recent *"Child and youth wellbeing strategy"* (2019). The government outlined that youth must be *"accepted," "respected,"* and *"connected"* so that they *"will blossom, grow, and journey towards the greatest pathway of life"* (383) (p. 5). This research suggests that the tested programme supported the youth participants according to the strategic sentiments of journeying towards the greatest pathway of life. This research demonstrated that the tested programme provided a practical programme to achieve youth

development, as evidenced primarily through the values-based and behavioural social change pillars. This research also postulates that leadership, healthy lifestyles capacities, with an emphasis on mental wellness, and community engagement substantiate the government's high-level hopes for youth wellbeing.

Evaluation strengths

This research required specific data collection and analysis methods to achieve the complex task of evaluating youth empowerment while upholding CBPR principles. The *"Health and Pacific Peoples in New Zealand"* report explicated that interventions designed to empower communities must contain strong evaluation strategies to capture the nuanced, complex outcomes (67). This research employed a robust approach to data collection and analysis that captured the multidisciplinary, subjective outcomes of empowerment and programme impact. Having multiple sources of qualitative data from different players in the research (i.e. youth, community research facilitators, and the community organisation CEOs) generated open-ended data that contextualised and ascribed meaning to their humanistic and subjective experiences. It helped uncover beliefs, values, and reflections on the programme, whereby all stakeholders could describe them in their own words. In this context, interviewing individuals other than youth also provided insight on community change and yielded the community partners' perspectives. As Patton (2002) comments,

> *"The purpose of qualitative interviewing is to capture how those being interviewed view their world, to learn their terminology and judgements and to capture the complexities of their perceptions and experiences"* (238) (p. 348).

Multiple data sources provided a powerful means of data triangulation to ensure that the findings accurately portrayed the group and community experiences. The data were also analysed effectively to garner insights into the programme outcomes. The *"5 Pillars of Social Change"* framework of evaluation exposed more than behavioural outcomes of youth. It provided insight into the multidisciplinary layers of social change at the group and community levels. The deductive thematic analysis allowed specific themes to emerge that could have been missed in more pre-determined, rigid evaluation frameworks. The process of member validation ensured that the data and analyses accurately portrayed the community and youth experiences with hosting and participating in the programme. It affirmed that the themes and descriptions captured their voice and that the interpretation extracted relevant insights and implications to achieve the research objectives. Last, this evaluation led to a deeper understanding of the interaction between the five pillars. It substantiated the process of social change concept, a key finding from this research.

Research limitations

This section identifies the potential sources of errors in this study, discussing how they were minimised and how may have they affected the interpretation of the results. This section discusses four research biases, limitations with the evaluation of the model of co-design, and positionality as a non-Pasifika researcher. Where applicable, future translations are introduced.

Research biases

In this research, bias is defined as any systematic error in a study that results in an incorrect estimate of the effect (384). Within intervention research, bias can occur when a systematic error is introduced into sampling or testing by selecting or encouraging one outcome or answer over others, whereby misrepresenting the effect of the intervention.

Sample selection bias

Selection bias is a systematic error that originates from the procedures and methods used to select participants and factors that may influence study participation (224). Specifically, volunteer bias existed in this study. Volunteer bias occurs when there are differences between participants and the target population because research participants volunteer, which can represent youth attitudes towards the intervention or the institutions involved (385). Volunteer bias was expected within this research design because of the convenience sampling technique employed and since participation in the study was a large undertaking. Participating required much more involvement than a mere quantitative survey: the youth committed to an intervention that demanded weekly commitments, over several months. There was no incentivisation, nor requirement from school and it is inevitable that only

youth who were interested in the programme (and by extension, healthy lifestyles and empowerment), participated.

Non-random selection sampling is a limitation because it cannot be assumed that the sample is representative of the general Pasifika youth population. Volunteer bias undermines our ability to make generalisations about the programme to all Pasifika youth. Since the participants were essentially self-selected, they had an interest in the programme and could have achieved greater outcomes or personal transformation from the programme. Despite this limitation, however, the purpose of the research was to conduct CBPR and to test the youth empowerment and co-design programme. We had to work with the communities and ensure that the research parameters were achievable. The communities suggested doing convenience sampling for recruitment because it reduced the burden for the community research facilitators and was determined that convenience sampling would be sufficient to test the feasibility of the programme and establish a sound base for future research programmes with larger, randomly selected study design.

Attrition bias

In this research, only participants retained in the programme completed the programme evaluation; therefore, there is potential the impacts of the programme to present stronger because the participants that left the programme could have diluted the social change outcomes (i.e. attrition bias (386) (387)). It raises the important questions, *"would the results have been different if the youth that left the programme were retained?"* Accounting for attrition bias is a complicated task within YEPs, and it is often omitted from research methods and discussions. Only two of the reviewed references accounted for attrition (128) (19). Within the first, Berg et al. (2009) examined the impact of attrition by comparing participant score of those who completed all four assessments to those who did not (128).

Within the second evaluation, Zimmerman et al. (2018) assessed the impact of attrition of the results by comparing variables of *"self-efficacy"* from quantitative surveys at different time points of the study (19). They both concluded that attrition did not influence empowerment outcomes; however, their approaches were quantitative and could not be replicated in this research design.

This research postulates that it can still draw meaningful conclusions from the study and that attrition bias did not influence the credibility of the results based on three important considerations. First, the programme retention of 71% is high compared with other youth empowerment programmes that continue to draw conclusions about their tested programmes, suggesting that this research can too. The final sample also almost reaches the sample aim derived from the pilot study as an adequate size to garner meaningful evidence regarding the programme outcomes. Second, the module evaluation surveys indicated that participant satisfaction remained consistently high as the programme progressed. If youth left the programme for satisfaction reasons, this would have displayed in the earlier module evaluations, and the Likert scores would have increased over time. An increase in satisfaction scores did not display, and the Likert scores were consistently high throughout the programme. Last, six of the 12 youth that discontinued the programme did so for extenuating circumstances as opposed to satisfaction or uptake reasons. In a large meta-analysis of YEPs, Morton and Montgomery stated that for the research programmes that experienced significant attrition claimed that if participants leave for reasons unrelated to the exposure (i.e. intervention), this might have little or no impact on the results (288).

To mitigate attrition bias, future programmes should focus on maintaining high retention and determining methods to engage with the youth that discontinued the programme. This would provide data for comparative analyses to verify that specific if the outcomes are attributable

to the programme. Specific recommendations were discussed earlier in the uptake analysis and are elaborated later in this chapter.

Participant bias: inaccurate recall and desirability bias

There were also two biases within this research related to the youth participants and how they shared their research experience. Recall bias and desirability bias are systematic errors that occur when participants do not remember previous events or experiences accurately, omit details, or embellish specific outcomes (387). In this study, the FGDs and mobile-mentaries were conducted six months after the programme ended to avoid recency bias (a cognitive bias that favours recent events over historical ones); however, this potentiated recall bias, where the youth did not remember the programme accurately. Recall bias was mitigated by conducting the module evaluation surveys directly after the modules in combination with the final programme evaluation to capture both retained social change outcomes and module outcomes. Together, these sources triangulated the data. In other YEPs similar to this study, recall bias was limited by triangulation and having multiple data sources and perspectives (331) (388) (336). The youth may have also felt pressure to share positive outcomes of the programme only, potentiating desirability bias. One way this is often overcome within youth participatory action research is building safe spaces for the youth to express themselves. Kirshner et al. (2011) state that researchers need to build rapport with the youth participants so that they can share openly, particularly disconfirming or alternative evidence and managing personal bias against disconfirming or alternative evidence (389). In this study, there were two methods employed to overcome desirability bias. First, for the module evaluation surveys, they were anonymous. Second, the research facilitators articulated the importance of the youth's honesty within the data collection methods and asked follow-up questions to gain deeper insight into the youth’s responses.

Data analysis

Thematic analysis bias and merging data sets

In thematic analyses, positivists claim that reliability is a concern because of the potential for interpretations of data possible and for researcher subjectivity to distort the analysis. In the position of this research, pragmatists believe that there is no one correct or accurate interpretation of data and that it is essential for researchers to appreciate subjectivity and experience when deciphering *"reality"* within analysis (197) (208) (209) (182). Quality was achieved through researchers continually reflecting on how we shaped the developing analysis as well as systematic methods of member validation and data triangulation. Member validation provided the opportunity for all youth that started the study to provide feedback, and there were no issues or discrepancies, even amongst the participants that did not complete the programme, nor the community researcher facilitators and organisations. In this study, the thematic analysis results were cross-referenced with the 15-point checklist of criteria for good thematic analysis by Braun and Clarke (2006) (390).

The second potential limitation within the data analysis was that it merged multiple data sets from two communities, which, potentiated contradictions between different experiences and perspectives. This was most relevant for the individual case study and uptake analyses. In this research design, multiple data were collected as a form of data triangulation, which was decided upon to outweigh the potential generalisations of the data. To minimise inaccuracies and misrepresentations, the themes were kept separate for both communities where differences emerged, and, again, all data underwent member validation.

Evaluating co-design as an independent model

Although part of the evaluation targeted the uptake of the model of co-design, this research was unable to determine how the model of co-design stands alone because it was embedded

within the wider empowerment programme. The individual module analyses helped determine which capacities and capabilities, or components of social change, associated with each module, however, there was much cross-promotion and mutual development throughout the empowerment component and the model of co-design. This research was more concerned with the synergies between the model of co-design and the empowerment component. However, potential future research could test the model of co-design as an independent entity. Conducted with Pasifika youth, embedded within a community service organisation etc. would provide a useful comparison with this research to test how the model stands alone and to explicate its interactions with empowerment programming.

Positionality as a non-Pasifika researcher

Last, this research was led from a Western-Canadian "*palagi"* worldview, and, therefore, broaches the question, *"would the results and interpretations have been different had it been Pasifika?"* Author positionality and the researcher's objectivity are important to declare in highly cultural contexts such as Pasifika health research. Seminal researcher of positionality and inquiry, Lincoln (1985) necessitates that positionality within research:

> *"recognises the post-structural, postmodern argument that texts, any texts, are always partial and incomplete; socially, culturally, historically, racially, and sexually located; and can therefore never [fully] represent any truth."* (230) (p. 280).

Capturing Pasifika wisdom and experience is particularly challenging within public health research since westernised biomedical definitions do not align with Pasifika conceptualisations of health (e.g. the Fonofale). Additionally, transformative experiences are deeply personal and subjective. It was important that this research upheld criteria for cultural

fit (391) and cultural competency (4), and that these were not just unsubstantiated aims, but rather, they were practically achieved (4) (391). Although it is inherently biased to state that this research was not affected by the western-Canadian positionality, there were a handful of strategies employed that suggest that this research effectively captured the voice of the participants. First, the research methods took a Pasifika-specific approach. *"Pacific Research Methodologies"* (PRM) literature and experience by Pasifika co-investigators on the PPYEP informed the research methods employed. The key aspects here were drawing upon cultural values of Pasifika, encouraging communication throughout the research design, and focusing on relationships (194) (195). Second, the aim of this research also signifies how it valued the Pasifika communities involved. It recognised that it took place in, and was addressed to, communities. Ultimately, it concerned how to affect social change and improve the health outcomes the Pasifika communities involved. Deloria Jr (1997) affirms that the rationale for any sound community-based research must be to procure wisdom from the community to benefit the people:

> *"Every society needs educated people, but the primary responsibility of educated people is to bring wisdom back into the community and make it available to others so that the lives they are leading make sense"* (392) (p. 4.).

Third, the research design also provided ample opportunities for the community partners and youth to influence how the programme was delivered and to substantiate the data and their interpretations. The programme delivery was co-facilitated, and there were weekly meetings to discuss the modules, their content, and programme adaptations. The data collection methods also involved the community facilitators, and the community partners stated that the qualitative methods, particularly the values pillar, substantiated a language of "evidence" that was important to them. They reinstated that for Pasifika, it is essential to approach health

interventions research from a values-based process. The data analysis methods also strived to interpret the data to describe the experiences of those involved accurately. The methods were informed by several seminal qualitative researchers, particularly on positionality, community, and relationality, including Creswell and Miller (245), Bazeley (205), Denzkin (231), and Lincoln and Guba (208). Data triangulation and member validation were practical ways to gather voice from the youth and community partners and provide an opportunity for them to corroborate the findings.

Finally, as aforementioned throughout this thesis, relationships were of utmost importance. Pasifika researcher, Anae's, recent work on Pasifika Research Methodologies, describes Pasifika relational values and worldviews using the "va" (348). She describes that when human relationships are secondary to research methods, the resulting research is ineffective (348). This sentiment was carried throughout the research design as relationships remained a top priority. Several practical steps were taken to spend time with the community, demonstrate authentic care in the outcomes and wellbeing of the youth, and the research was approached as a partnership. Strong relationships also ensured that when there were cultural differences, they were explored with curiosity and a humble posture of learning. Both community partners specified that the research partnership achieved and upheld a strong relational interface and that this research process cultivated deep care for their communities and youth. SWPICS CEO stated:

> *"I want to acknowledge that I live by this saying: "I know that our people, they don't care what you know, they want to know that you care." And certainly, yourself and [the researchers] have demonstrated that care for my community and my young people. You may be a little bit more learned; you have letters after your name! But you also had to have something else that was much deeper than the letters and skills*

and educational achievements. You had to care. And they saw that. That needs always to be central to how we build relationships. So, I don't care if it's a PhD or a Masters, I don't care…if a boy of mine had a struggle at school and you would say 'are you okay?' and be able to talk it through with him and bring him back to a safe space- your PhD doesn't amount to that. You really had to demonstrate and sincerely care, which is certainly the feedback I've got." (SWPICS CEO)

Research limitations summary and conclusions

This research was subject to selection bias, attrition bias, and participant recall and desirability biases that limit the ability to extrapolate our findings to all youth participants and the wider Pasifika youth population. Additionally, there are inherent risks when conducting thematic analysis, particularly from a non-Pasifika author positionality. Ultimately; however, this was an exploratory study of the intervention, and validity enhancing practices were implemented, there are no guarantees from which verities can be derived. This does not mean that research should not be conducted, nor draw meaningful conclusions.

Future directions

This research and thesis propose three areas of future research: modifying the research design and programme evaluation, refining the programme content, and applying the programme to different transformative youth contexts.

Research design and programme evaluation

There are three future iterations of the research design and programme evaluation. First, this research suggests that there is potential to develop the *"5 Pillars of Social Change"* framework into a model of social change evaluation. The model would contain a set of questions within each pillar and level to be replicated and be utilised in different research settings as a tool for programme evaluation. This would increase the potential for researchers to contextualise their findings within a wider pool of youth programmes and more systematically compare social change outcomes and results. The model would utilise questions tested in this research and insight from the youth and community partners on the process of social change.

Second, there is the potential to empower the youth to lead the evaluation process. This would involve developing more research-specific capacity and capacities so that youth could collect and analyse the data. It would further develop the youth's translatable skill sets to advance their career development within research and public health settings, and ensure that the findings match their experiences.

Last, there is potential to utilise a mixed methods design in future programme iterations. Mixed methods could provide a more generalisable, comprehensive evaluation that encourages participants to both describe their subjective experiences and substantiate

changes with numerical measurements. The quantitative survey questions offer the potential to generate data on specific, refined data at different times to understand the longevity of programme impact. The surveys can utilise existing empowerment measures to compare programme outcomes (e.g. the psychometrically validated socio-political control (SPC) scale (345) (346) or Ozer and Scotland's measure of psychological empowerment (PE) (168)) and generate the questions with the community partners specific to each pillar of social change. It is also recommended that these employ a 5-Point Likert scale to gauge subjectivity and meaningful deviations from a binary “yes” or “no.”

Programme refinements

The youth and community partners were asked about programme refinements and future adaptations of the programme. They fall under three themes:

(i) increased opportunity for capacity development;

(ii) clearer communication of expectations during recruitment; and,

(iii) integrating the programme within the existing services organisations.

Increased opportunity for capacity development

The community partners suggest that one way to increase youth capacity development is to form a youth governance council. The governance council would influence programme development and delivery decisions to ensure youth voice and optimise uptake. The governance council could play a more active role in conducting the programme evaluation. It would also represent an organisational willingness to redistribute power and have youth voice in each organisation.

For the wider programme, the youth called for more emphasis and opportunity to build healthy lifestyle capacity skills, including cooking or budgeting. It suggests that these skills are underdeveloped for Pasifika youth and that they are seeking these opportunities in transformative programming. The youth and the community partners also called for more capacity development opportunities within the model of co-design for both youth and staff. This suggests that there is a need and desire to continue to develop community organising and design-thinking skills. Increasing the youth's intervention development capacities could also increase the knowledge translation outcome of the programme and better equip the youth to mobilise their communities.

Clearer communication of expectations during recruitment

The youth called for clear communication of expectations with participating in the programme. This programme refinement is feasible, especially since the programme has been tested within each community. This study exemplified the nature and effects of the programme and substantiated what "empowerment" and "co-design" mean in the context of the PPYEP. It provided the community organisations and the wider research team with an experience-based, robust discourse to convey the programme to future participants.

Integrating the programme within the existing services organisations

From the community partner perspective, they suggested developing a plan to embed programme into existing services to ensure longevity and uptake beyond the PPYEP research partnership. They claimed that this would be a straightforward process because the programme meets the internal criteria and organisational values of each SWPICS and The Fono. If the programme were to be embedded within their organisations, it would also ensure that the programme continues to be Pasifika-specific and culturally adapted to each

community context. The community partners also stated that future evaluation of the programme with their input on specific measures and indicators could secure future funding. Further, involving the community facilitators in the evaluation and grant application processes would constitute another means of organisational capacity development.

Programme sample and applications

This programme also has the potential to be tested amongst different samples of Pasifika youth. Age, gender, and community composition were demographic variables explored in the programme uptake analysis; however, this investigative study could not substantiate any significant differences between participants based on demographic variables only. Further exploration is needed for the programme in different rural and urban locations with proportionate male to female participants and amongst homogeneous and diverse Pasifika ethnic contexts.

This programme also has the potential to affect programmes outside of a Pasifika prediabetes prevention context. The content could be modified to target other major health issues such as mental health or sexual health, as well as issues outside of health, including environmental causes, civic rights, or international development challenges. The programme is also a natural fit for other Indigenous and marginalised groups. This research postulates that it should be adapted and tested with other culturally diverse communities around the world. Last, the programme demonstrated the potential to be tested within other community settings, including school curricula, NGOs, and church contexts. This research indicated that adapting the programme to each community context as well as the facilitation training were essential elements to translate the programme into each community. It also indicated that the emphasis on relationships, the engaging programming style, and continuous opportunities for capacity development should be retained.

Chapter 6: Conclusions

The final chapter of this thesis summarises key findings of this research and implications for advancing the field of youth empowerment, and social-change focused health promotion research. The research implications fall under two topics, indicative of the primary outcomes of this research:

(i) Designing programmes for youth to become agents of social change synergising empowerment and co-design; and,

(ii) Evaluating youth empowerment programmes from a social change perspective.

Designing programmes for youth to become agents of social change: synergising youth empowerment and co-design

This research confirmed that together, youth empowerment and co-design are an effective approach to advance social change in Pasifika communities. They are emergent, whereby the whole programme is greater than the sum of its individual components. This research validates that the tested programme can be co-hosted and embedded within a community setting and that organisations can support youth to be agents of social change.

The tested model of co-design

This research determined that co-design enhanced empowerment objectives and offered a practical model to translate empowerment outcomes into community change. The model of co-design structured both the intervention development and the youth's community mobilisation action-plans. Concurrently, the empowerment component increased the youth's knowledge about healthy lifestyles, leadership and healthy lifestyles behaviours, individual and group values that bolstered the co-design process. The *Gift + Issue = Change* module provided a seminal link between the empowerment component and the model of co-design. It harnessed the youth's capacities and capabilities that deepened within the empowerment component, explored the root cause of prediabetes for Pasifika, and encouraged the youth to ideate ways to affect them.

Operationalising co-design

This research was novel because it determined a practical, replicable model of co-design, specific for youth. The tested model successfully co-designed two group interventions to reduce prediabetes for Pasifika peoples. It provided a framework in the co-design model for youth to focus their ideas, determine if they were practical and implementable, and anticipate

challenges. The five-modular model operationalised co-design theory and corroborated that involving young people in group efforts to identify and to critically assess the context for health issues is an important first step to develop strategies to overcome them. The tested model also revealed three tenants (i.e. principles) of co-design that must be considered when implementing co-design within a community-based setting: (i) co-design as a values-based process, (ii) collective decision-making, and (iii) empowerment.

Conceptualising empowerment

The social change evaluation and concept evidenced a more refined conceptualisation of empowerment. At the beginning of the research, two key components comprised the theoretical conceptualisation of empowerment: (i) the purpose of empowerment is to develop the capacity and capabilities of young leaders that contribute to the process of social change and (ii) empowerment occurs at the individual, group, and community levels.

Based on these research findings, empowerment enables young leaders to contribute to the process of social change and links social-change knowledge with an individual's values and behaviours. It suggests that group and community-levels of empowerment play a supportive role to reinforce and institutionalise cultural norms that preserve empowerment outcomes of individual youth. This research postulates that together, a youth's knowledge, values, and behaviours enable them to action social change in their lives and wider communities. As such, this research concludes that:

> *"Youth empowerment involves individuals gaining critical awareness about key issues in their communities, accessing skills, and fostering the efficacy to change it."*

The critical awareness component involves youth self-determining and describing social issues and why they exist. In the context of a healthy lifestyles, this ensures that the social

change efforts address determinants of health relevant to the youth's lives. It also acknowledges that although there are determinants of health outside of an individual's control (i.e. an environmental aetiology of prediabetes), with critical awareness, one can better navigate these environments and improve their individual and community health. The second component, accessing skills, pertains to youth identifying existing strengths as well as those developed within the empowerment programme. It implies that youth bring different strengths based on their experiences and knowledge, forming groups that are stronger than their individual components. In the context of healthy lifestyles, this pertains to healthy lifestyles capacities and competencies as well as leadership skills that enable them to mobilise their communities. Last, and importantly, the efficacy to affect social issues transforms knowledge and skills into action. This research suggests that efficacy comes from personal and group values and motivations and the belief that one can make a positive difference.

Embedding transformative youth programmes into community settings

This research determined several criteria that implicate future programme development and delivery in CBPR partnerships and community settings. It suggests that communities must be involved in developing culturally responsive pedagogy and that transformative programmes are strengths-based, highly participatory, and align with the values and vision of community partners. More pragmatically, programmes must:

(i) explicate clear expectations of involvement in the programme;

(ii) involve experiential activities that *empower* youth to participate in critical dialogue about their experience of health;

(iii) develop healthy lifestyles, leadership, and social change capacities; and,

(iv) incorporate a specific knowledge translation component for youth to activate their communities.

In a culturally specific setting:

(i) the programme must contain culturally relevant content

(ii) facilitators represent the youth/ community and;

(iii) the programme must utilise protective factors and strengths from the community

Last, if the programme is embedded within a partnering organisation:

(i) relationships must underpin the entire process;

(ii) the programme aligns with the values and vision of each organisation and has the adaptability to tailor to the specific community contexts; and,

(iii) there are continuous opportunities for organisational capacity development.

Evaluating youth empowerment programmes from a social change perspective

The "5 Pillars of Social Change" framework of evaluation

The framework of evaluation provided a holistic evaluation approach to capture the impacts of the tested youth empowerment programme. It was effective within the qualitative research design because the pillars structured the deductive thematic analyses while providing opportunities to capture the subjective, emergent outcomes of the participant's experiences. As per the future direction recommendation of developing a model of evaluation, this research concludes that the *"5 Pillars of Social Change"* model should be utilised by other health practitioners and public agencies to capture the transformation of social-change oriented programmes. A model of evaluation has useful applications for research, programme development and evaluation, and to inform funding allocation for health promotion and social-change focused programmes.

The social change concept

This research suggests that for individuals to make behavioural changes that support healthy lifestyles or social action, there are other reinforcing and supporting components. The tested programme influenced five pillars of social change at three levels of society.

(i) The values pillar encapsulated how the youth shifted their personal motivations to care about healthy lifestyles and to better their communities.

(ii) The knowledge pillar comprised youth's increase in knowledge about health, themselves, and leadership.

(iii) The behaviour pillar contained changes the youth's individual actions around healthy lifestyles and community mobilisation. It contained the capacities learned and those put into practice.

(iv) The service sustainability pillar described how the organisations changed to support the youth and the programme.

(v) The socio-political change pillar encapsulated how the programme contributed to the important discourse on shifting cultural norms of Pasifika health and youth leadership.

The process of social change derived within this research provides a coherent understanding of the interactions between different pillars that move individuals, groups, and communities in a particular direction. The pillars and levels were interconnected and non-linear, and the ways they interacted represented a broader progression (i.e. process) of long-term social change. They informed a social change concept where:

(i) values underpin behaviours, how services operate, and the socio-political norms of society;

(ii) knowledge informs behaviours and socio-political change;

(iii) behavioural change influence socio-political change;

(iv) services support behavioural and socio-political change; and,

(v) socio-political change normalises and reinforces values, furthering the process of social change amongst the other pillars.

This concept could contribute to the wider literature on the theoretical conceptualisation of processes of social change and has applications to evaluate and conceptualise transformative programming or social movements within and outside the context of healthy lifestyles.

Final remarks

This research substantiates that Pasifika youth can transform into agents of social change to improve community health. This research confirms that co-design is a promising addition to youth empowerment programmes, and the tested model provided an outlet for knowledge translation and developing community interventions. It suggests that youth empowerment contributes to a process of social change involving five interconnected pillars and that the *"5 Pillars of Social Change"* framework of evaluation is an effective tool to capture transformation. It also suggests that partnerships between public health researchers and communities are essential to advance healthy lifestyles, particularly within a Pasifika setting. The tested programme has the potential to influence future research in transformative youth programming and public health promotion. Ultimately, the question remains: where can the programme be utilised and with whom?

Appendices

I. Programme description

The programme tested in this research contained two components. Part I: the empowerment component, and Part II: the model of co-design, as presented in Chapter 3.

Part I: Empowerment component

I.I Historical perspectives of healthy lifestyles of Pasifika peoples
I.II Leadership compass
I.III Heart Health
I.IV Navigating a supermarket
I.V Community cooking
I.VI Mental health and wellness

Part II: Model of co-design

II.I Community contract
II.II Root cause analysis
II.III Gift + Issue = Change
II.IV S.M.A.R.T. Goals
II.V Seven-steps

Each component contained a set of modules that had a similar structure: an experiential activity and a debrief discussion to extract meaning and implications of the activity. The following sections present the objectives and a description for each of the modules for the empowerment and co-design components.

Part I: Empowerment modules

Module I.I: Historical perspectives of healthy lifestyles of Pasifika peoples

Module objectives

- To develop a knowledge base of healthy lifestyles for Pasifika peoples
- To present insight on healthy lifestyles from social, cultural, generational and historical contexts

Description

This module was a presentation-based workshop that covered the following topics: defining prediabetes (and further, distinguishing between prediabetes, type 1 diabetes, and type 2 diabetes), identifying risk factors for prediabetes (with an emphasis on weight, diet, physical activity, family history, and ethnicity), presenting prevalence statistics of prediabetes in New Zealand (with an emphasis on the disproportional representation of Pasifika youth and adults in comparison to New Zealand Europeans), and understanding the environmental factors associated with the prediabetic/ diabetic epidemic. Content from this module was informed by Swinburn and Egger's ecological model of obesity (44) as well as other social, environmental and cultural determinant of health research of Pasifika peoples (64) (39). The module also explored the historical determinants of health. It included content on traditional foods of the Pacific Islands, Pacific migration to New Zealand, and the current status of Pasifika people's health and lifestyles. The presentation was followed by a debrief asking the following questions:

- What are your thoughts on how lifestyles and the availability of food, comparing now to 200 years ago?
- What would happen if we lived our lives in this way?
- What are some ways we can encourage ourselves and communities to examine our lifestyle habits based on the based past and now?

Module I.II: Leadership compass

Module objectives

- To identify personal leadership styles
- To distinguish the strengths and weaknesses of each leadership style
- To learn how to build effective teams

Description

The facilitators asked youth the question, “what is leadership?” and developed a working definition using the youth’s perceptions. Facilitators then read the descriptions of the four leadership styles, which, is based on the leadership compass, a theory founded by scholars Baum and Hassinger (393) and grounded in Indigenous principles and philosophies:

Leadership style	Strengths	Weaknesses
North- Warrior	You like to get things done. You are known as someone who has courage and endurance. You enjoy new ideas and challenges, and you take risks. You are in your element when you are in charge when you can map out plans, and have others carry them out. You are very persuasive and can motivate others with your energy.	You want things done your way, and you want them done now. You have difficulty delegating because you don’t think anyone else will do it right. You are impatient when tasks are incomplete; in your impatient state, you bulldoze over others. You will fight for your rights and try to get your way, unwilling to see another perspective. Others may see you as overbearing and reactive.
South- Nurturer	You are known as a collaborator and a team player, and you thrive when giving support to others. You are known as a warm, friendly person. You are very loyal to your friends	You are too worried about what everyone thinks. You can be too trusting, give in too quickly, and take on too much to be seen as a good person. You will assume the blame for something even if you weren't responsible, especially if it means

	and dedicated to your work. You are trusting of others, and you are concerned with fairness, how people feel, and the process in which things are done.	there will be no conflict. You are a "rescuer"-saving people even when they don't want to be saved. Others may see you as a pushover.
East-Visionary	You are creative, innovative, and intuitive; you are a divergent thinker, seek new connections, and easily link ideas together to create a high-level strategy. You are driven by your vision; you know what you want and optimistically go after it. Your social skills are excellent, and you freely share your feelings with others.	You think that your vision will carry you through and overlook details, often resulting in things falling between the cracks. Follow-through isn't your strong suit. You may appear impractical and disorganised, and you become overly emotional and melodramatic. Others may see you as flaky.
West- Analyst	You are very analytical, and you base your analysis on facts and logic; you are careful, methodical, and deeply introspective. For you to accept a plan or a new idea, it must have a practical payoff. You are pragmatic in dealing with others. You like to look at all angles of a problem before taking action, and you will always have a "fail-safe" back-up plan. You are seen as solid and not easily ruffled.	You can be too critical of others and their work. You analyse problems too much and thus find it difficult to make decisions. You often provide too much data, and once you present your position, you become stubborn and unwilling to move. You often stick to a traditional view rather than accepting a new way which, may be more effective. You don't express your feelings well. Others may see you as cold and indifferent.

The youth then self-identified with one of the four leadership styles that most accurately fit their type of leadership and how they place themselves within a team. The youth then split into their leadership groups and answered a series of questions about their leadership style. In these leadership groups, youth were given a team challenge in which they had to exercise their leadership skills and complete the given test. The groups were asked to build the tallest

coconut tree with the provided materials in a certain amount of time. Groups presented their final trees and the facilitators "judged" them (in a playful manner). The groups discussed the advantages and disadvantages of working with people of a similar style.

Module I.III: Heart health

Module objectives

- To develop capabilities of measuring and interpreting blood pressure
- To learn about how blood pressure is an indicator of health

Description

The programme facilitators and a visiting Pasifika nurse trained the youth to measure and interpret blood pressure using a sphygmomanometer. Youth learned about the role of blood in the body, what blood pressure is, the difference between systolic and diastolic blood pressure, blood sugar levels, and how to recognise high blood pressure levels. Groups discussed the high blood pressure is a risk factor for other diseases (i.e. prediabetes) and how NCDs connect to healthy/ unhealthy lifestyle behaviours.

Module I.IV: Navigating a supermarket

Module objectives

- To explore and compare the costs of foods for different socioeconomic realities of Pasifika families
- To learn how to eat healthily on a budget
- To explore issues with marketing of unhealthy food products
- To learn about the environmental impacts of different food choices

Description

Youth were divided into teams and given a profile of a typical Pasifika family in New Zealand, each with different hypothetical parameters (total money to spend, number of family members, and any impending health issues etc.). Teams went to the supermarket and had to shop within their given criteria. Key discussion points included the price of food, budgeting, food marketing, and the financial realities for different Pasifika families and the consequent implications on health.

- **Family 1: Power couple** – high socioeconomic level with two working adults ($200.00/week)
- **Family 2: A nuclear family** - a middle-class family of five with two working parents and three kids ($150.00/ week)
- **Family 3: One-big-old-happy-family** – lowest socioeconomic level with one toddler, three teens, two working adults, and two grandparents- one of which has diabetes ($250.00/ week)

Module I.V: Community Cooking

Module objectives

- To cook and prepare a meal using healthy ingredients
- To eat as a "family"
- To discuss the benefits of cooking your food

Description

Youth separated into smaller groups that each cooked/ prepared one component of a Mexican feast: guacamole, salsa, toppings, salad, beans, and setting the table. This highly interactive module encouraged youth to work together, learn practical cooking skills, and experience one of the most intimate means of connecting, sharing a meal. Groups then discussed cultural implications of cooking and sharing food the links to Pasifika culture and community.

Module I.VI: Mental health and wellness

Module objectives

- To introduce the Fonofale model of health
- To identify sources of psychological stress for the youth
- To develop skills and coping mechanisms to build strong mental health
- To build confidence through group affirmations

Description

Facilitators presented the Fonofale model of health (60). The Fonofale model encapsulates the interconnectedness between four pillars of health: physical, spiritual, mental, and other

(gender, socioeconomic status etc.), with a base of family and an overarching roof of culture. There were three phases to the module. First, the youth symbolically dismantled the issue of psychological stress by deconstructing a tower of building blocks positioned in the centre of the room. Each block represented a source of stress or a mental health issue experienced by the youth. One by one, youth shared what their block represented with the group. Once all of the blocks were removed, the second phase was to rebuild the tower. Each block represented a positive skill, coping mechanism, or strategy that the youth could practically implement to develop strong emotional and mental wellbeing. During the final component, the youth wrote positive affirmations to one another.

Part II: Model of co-design

The tested model of co-design offered a pragmatic, implementable set of workshops that substantiated co-design theory and was culturally tailored for Pasifika communities. Co-designing the community intervention culminated programme and encouraged involvement from multiple players: the youth, the research facilitators, and the community partners. Basic parameters of the co-designed community interventions were predetermined based on objectives of the wider PPYEP.

Target group: Pasifika working age group, age 25-44 years

Sample size: n=20 adults

Timeline: 8-12 weeks

Desired outcomes: prediabetes prevention and healthy lifestyle promotion through three types of behavioural change: healthy diet, physical activity, and weight management

The target group was selected based on three factors: one, Pasifika adults aged 25-44 years have high prediabetes prevalence rates; two, this age group still has potential for preventing the progression to T2DM; and three, they often have the least amount of time to prioritise healthy lifestyles behaviours because of work and family obligations. The desired outcomes focused on behavioural change to prevent prediabetes as determined by diabetes healthy lifestyles guidelines for New Zealand by McNamara (266). The following section presents the objectives, description, and a brief rationale of each of the modules (II.I-II.V) within the model of co-design that provided a structural framework for youth to translate individual transformation this into community action.

Module II.I: Community contract

Module objectives

- To outline the goals and anticipated challenges of the programme
- To define the culture of the group and outline group values and vision

Description

This module helped create an optimal learning environment and safe space for the entire youth empowerment programme. Unlike the other modules that comprised the final programme modules, the community contract was the first module of the entire programme. Facilitators asked the youth two questions: "what are you hopeful about the programme?

And what fears do you have about participating in the programme?" Individually, youth brainstormed their hopes and fears and then shared these anonymously with the group. Facilitators asked then the question, "what can we do as a group to ensure that our hopes come true and our fears do not?" The group co-created a working document – a community contract – of their ideas. The facilitators encouraged the youth to generate specific ideas and challenged the youth to think about elements that establish a thriving team. The result was a large sheet of paper with the vision, values, and goals for the programme. The last step was for each youth to sign the contact- metaphorically binding them to the group rules. The community contract was referenced and reinforced throughout the programme.

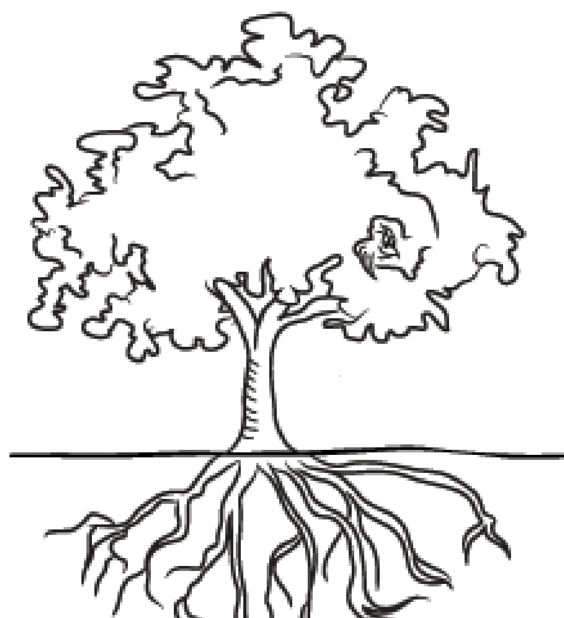
Module II.II: Root cause analysis

Module objectives

- To brainstorm the systematic causes, supporting problems and visible impacts of prediabetes specific to Pasifika people
- To integrate knowledge accrued throughout the entire programme

Description

Youth formed small groups based on random allocation and dissected the issues of prediabetes. Youth categorised their ideas into three levels: one, symptomatic-level issues (the visible symptoms and outcomes of prediabetes); two, systemic-level issues (supporting issues that perpetuate prediabetes); and three, root-causes of prediabetes that includes the environmental, social, and cultural determinants specific for Pasifika peoples.



Following the brainstorming activity, groups presented their ideas and discussed that to affect change towards healthier lifestyles. The interventions must acknowledge the root causes of prediabetes.

Module II.III. Gift + Issue = Change

Module objectives

- To learn about social change, social movements, and the role of youth in each
- To brainstorm ideas about co-designing community interventions targeting prediabetes

Description

Facilitators delivered a workshop that encouraged the youth to brainstorm preliminary ideas for the community interventions. The module followed the conceptual formula shown below:

In this framework, the “gifts” referred to youth’s skill sets, talents, and areas of interest (both within and outside the PPYEP context), e.g. organisational skills, athletics, or social media. The “issue” referred to the issues that youth are passionate about pertaining prediabetes (continued from the previous module), e.g. poverty, mental health, or lack of education. The “change” referred to social change towards healthy lifestyles. Facilitators introduced the notion of social change and the five unique and interdependent components conceptualised in this doctorate as the five pillars of social change: increased knowledge, a shift in values, behavioural change, service sustainability, or higher-level socio-political change (to be discussed in detail in section 3.5).

Module II.IV S.M.A.R.T. Goals

Module objectives

- To learn about the five components of S.M.A.R.T. Goals framework (256)
- To evaluate each community intervention idea based on the S.M.A.R.T. Goals parameters

Description

Youth divided into smaller groups based on the initial community intervention ideas devised in the Gift + Issue = Change module. Facilitators introduced the following S.M.A.R.T. Goals theory for effective goal-setting (256), describing them in the context of co-designing successful community interventions:

- **Specific:** simple, sensible, significant, well-defined parameters of the project – often this answers the questions, what do we want to accomplish, why is this goal important, who is involved, where is it located, and which resources are involved?
- **Measurable:** meaningful, motivating markers of success to track progress – often this answers the questions, what will change look like, how will the intervention affect our participants, and how will we know if our intervention was successful?
- **Achievable:** attainable, reasonable, realistic, and implementable within the given parameters – often this answers the questions how can we implement our intervention and how realistic is the goal?
- **Relevant:** reasonable, relevant, results-based, and linked to the issue being addressed, prediabetes prevention – often this answers the questions is this

intervention relevant to our community, are we able to action our plan, and does this intervention seem worthwhile?

- **Time-bound:** timely and having a timeline for the planning, preparation, implementation, measurement, and analysis – often this answers the questions when what should we do in preparation, when would the intervention best suit our community, and how long should we run the programme?

The facilitators provided examples of action plans and social change projects that used the components of S.M.A.R.T. Goals effectively. The youth then applied S.M.A.R.T. Goals to review and refine their initial ideas. The youth shared their intervention ideas with the wider group as the first step in building consensus and deciding as a group which community intervention to develop.

Module II. V Seven-Steps

Module objectives

- To refine community intervention ideas
- To determine specific roles and responsibilities for implementation

Description

This module involved a 7-step process in generating a specific roadmap for intervention implementation within each community context, emphasising community stakeholders, potential partners, necessary resources, and foreseeable challenges. Youth participants and research facilitators completed the 7-step chart below for each of the main intervention ideas.

Roles	Responsibilities	Allies	Resources	Challenges	Possible solutions	Timeline

Groups then presented their revised intervention plans with the wider group. Youth were encouraged to consider the previous modules, their understanding of social change, their specific community context, and which intervention potentiated pragmatism and would be engaging for the community. Youth, along with the community facilitators and the research PIs, sat in a circle and deliberated their ideas. Youth articulated their insights and concerns as equal collaborators. Finally, employing a democratic, participatory voting process, the entire team selected intervention to progress.

II. Individual module case study analysis

The following section contains results from analysis (iii), where each module was analysed and presented as a specific case study with a focus on capacities developed, module outcomes, and module content, where applicable. The module case studies underwent inductive thematic analysis to derive the key themes. The individual modules are presented chronologically, corresponding to the programme's facilitation and delivery, for the empowerment component, followed by the model of co-design.

Module II.I Community contract

Key youth participant outcomes	• Learned about the PPYEP programme objectives and structure • Formed preliminary relationships with one another and the community research facilitators • Identified goals and potential concerns of participating in the programme • Each group created a shared vision for their values, interactions, and goals in the community contract as well as tangible ways to manifest these values (Figure 18) • Expressed concern for the health of their communities (particularly obesity and diabetes) and a desire affect positive change
Youth quotations	Not completed for the first week

Figure 18: Key values identified within the Community contract co-design module

Module I.I Historical perspectives of healthy lifestyles for Pasifika peoples

Key youth participant outcomes	• Learned about type 1 diabetes, prediabetes, and type 2 diabetes • Shared personal experiences of diabetes in their families • Explored prediabetes from an environmental perspective and the socio-cultural-historical context of health for Pasifika peoples • Expressed motivation to lead healthier lives and improve the health of their families • The Henderson group was more interested in learning about the biomedical components of prediabetes, whereas the Tokoroa group was more interested in learning about the history of their peoples and Pasifika culture.
Youth quotations	"What prediabetes is and how the environment can impact you having diabetes." "Diabetes comes from things other than us." "I am panicking because I can't change it [type 2 diabetes]. This is permanent and serious." "I want to learn how to prevent my chances of getting diabetes and everyone around me."

Module I.I Leadership compass

Key youth participant outcomes	• Learned about the four different styles of leadership as described by the Leadership Compass Model (393). • Identified their leadership styles based on these descriptions (the most common leadership style was the *Nurturer*) • Identified characteristics and values essential for effective leadership and that culture, personal experience, morality, upbringing, and mentorship are the main factors that influence their perceptions of leadership • Developed leadership skills as youth worked as a team to build a structure for the module activity (Figure 19). • Discussed barriers to leadership in a traditional Pasifika context and the implications of traditional perceptions of leadership for creating social change
Youth quotations	“I learnt about the leadership skills that I never knew I had.” “How to use everyone's skills.” “With Pasifika old school, traditional ways, there is a closed-minded view of leadership.” “We are all leaders.” “We can challenge each other and grow.”
Module content	Youth descriptions of effective leadership **Characteristics:** positivity, respectfulness, encouraging, selfless, goal-oriented, visionary, empathetic, responsible, humble, listener, observant **Values**: teamwork, inclusivity, honesty, love, humility, integrity, commitment, initiative

Figure 19: Leadership compass group activity

Module I.III Heart health

Key youth participant outcomes	• They were learned how to measure and interpret blood pressure and health risks of cardiovascular health using a sphygmomanometer (Figure 20). • Connected prediabetes to other HCDs and risk factors • Discussed how lifestyle behaviours affect blood pressure
Youth quotations	"The most important thing I learned was what blood pressure is and how to take blood pressure." "I learned more in-depth about diabetes/ prediabetes and how it affects the body."

Figure 20: Heart health module

Module I.IV Navigating a supermarket

Key youth participant outcomes	• Gained food budgeting skills for a healthy lifestyle (Figure 21) • Appreciated different socioeconomic realities for Pasifika families and drew parallels between the family profiles and their personal circumstances • Deepened critical thinking skills to analyse the layout of the supermarket • Learned about the environmental impact of their food choices
Youth quotations	"Budgeting correctly for a healthier lifestyle." "About what's in food and the importance of knowing what I am consuming." "How fun it is to figure out weekly food supply." "Spending money wisely on shopping for a family." "How foods from other countries affect our environment." "Reading and understanding more about the nutrition labels of products."

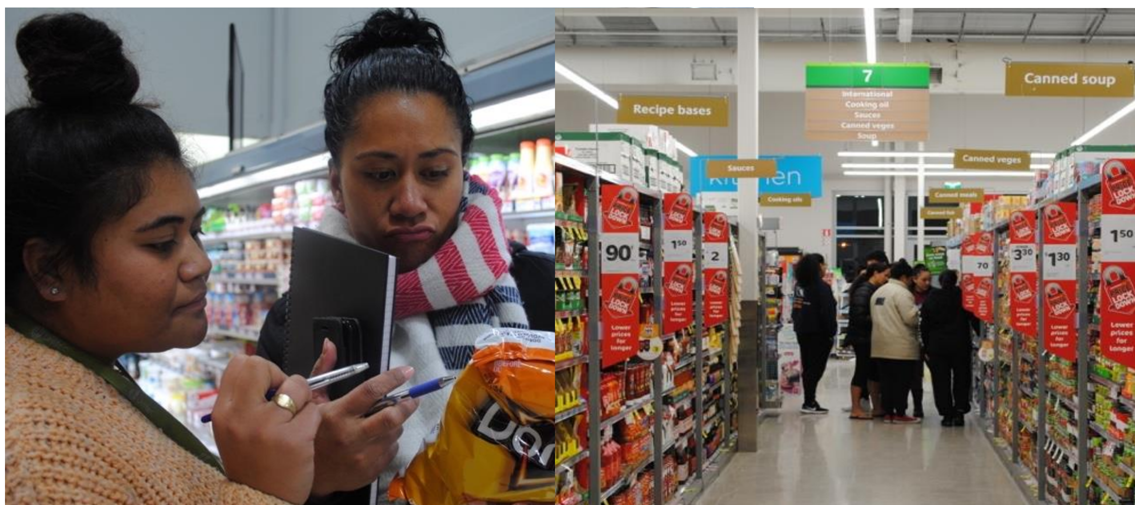


Figure 21: Navigating a supermarket module

Module I.V Community cooking

Key youth participant outcomes	• Developed practical cooking skills and prepared a plant-based meal (Figure 22) • Determined that preparing the food you eat is a way to save money and take ownership of what you eat • Enhanced relationships and fostered a sense of togetherness as youth socialised around food
Youth quotations	"This is so cool!" "We all sit together at one table. Sometimes I do this at home. But I should more." "Eating as a family is pretty cool." "Balance- not too much of this, not too much of that…if I'm going to eat cake, eating one piece, not 6." "Bettering your health through the food you eat."

Figure 22: Community cooking module

Module I.VI Mental health and wellness

Key youth participant outcomes	• Learned about the Fonofale model of health • Connected mental health to prediabetes, identifying that mentality affects one's psychical health • Learned about the prevalence of mental health issues for Pasifika peoples and discussed the implications of healthy lifestyles • Deepened trust, empathy, and support and demonstrated vulnerability as they shared personal experiences of mental health • Determined specific, implementable strategies to better cope with psychological stress • Participated in group affirmations (Figure 23)
Youth quotations	"I learned that anxiety, depression, money stress, relationship issues, things that cause angst, personal challenges- they are all real but solvable." "Learning about other's stress and how they overcome it." "That whatever you go through, you don't have to deal with it alone." "Knowing that there are people/ things out there that can help me when I am STRESSED and that people CARE." "The tree of life regrows."
	Module content: Module debrief questions and responses
"Why do these stressors exist, and why are the statistics for mental health higher for Pasifika people?"	"Stigmatisation." "We are taught to suppress these feelings." "Expectations to be happy. People expect certain things from you, so it is hard to be different than that." "If you have a problem you don't reach out and are hidden by the rest of your family, and we will get judged if we talk about our mental health, so it gets worse." "Lots of Pasifika youth don't know how to talk about a thing or to express ourselves in a healthy way." "People expect certain things from you, so it is hard to be different."
"How does mental health relate to prediabetes?"	"Your mentality affects your health." "Balance." "Understanding that people are more complex than at face value." "It affects everyone." "Mentality is so important to be healthy." "Healthy heart equals a healthy body equals a healthy mind."

Figure 23: Mental health and wellness module

Module II.II Root cause analysis

Key youth participant outcomes	• Synthesised knowledge gained from the educational component of the programme to think critically about the aetiology of prediabetes for Pasifika peoples • Determined that the root causes of prediabetes were due to poor mental health, implications of the social and environmental determinants of health and traditional Pasifika culture. • Began to envision how to address underlying health issues within their communities
Youth quotations	"We got a better understanding of why the issue exists." "It was important to breakdown the issue of prediabetes and to look at the problem from afar." "To know what to expect about what changed in a person's life before and after prediabetes." "To start action planning."

Module content: root cause analysis of prediabetes for Pasifika peoples

Visible problems	Supporting problems	Unseen causes
Depression Obesity Changes in weight Memory loss Shortness of breath Fatigue Blurred vision Amputation Pain Swelling of hands and feet Excessive sweating Irregular urination Darkened skin on armpits, neck, elbow, knees, knuckles Attitudinal changes: heightened emotions, stress, denial High glucose levels	Stress Smoking Working too much Societal/ community norms Poor diet High blood pressure Physical inactivity High accessibility of unhealthy food Low affordability of healthy food Lack of portion control with food Homelessness Age Psychology	Lack of knowledge * * * Mental health * * * The environment * * * Poverty * * Pasifika tradition * Lack of socialisation * Family roles * Psychological stress Financial burden Poor diet Genetic inheritance Ingredients in food Substance abuse Apathy Poor time management Lack of support Employment stress

Module II.III Gift + Issue = Change

Key youth participant outcomes	• Defined social change as per the social change framework • Learned about seminal social change movements, how to use leadership to affect issues in their communities positively, and the role of youth in social change movements. • Learned the *Gift + Issue = Change* formula for creating social change • Determined that to prevent prediabetes, “behaviour” is the most important pillar of social change • Developed preliminary ideas for community interventions that formed the preliminary intervention plan ideas that progressed to the future co-design modules (Figure 24) • Demonstrated increased motivation to participate in social change activities
Youth quotations	“How everyone can include their hobby with the community.” “Gift + Issue = Change.” “How can you utilise your strengths to have a positive impact.” “I liked learning about other youth leaders.” “Learning about what is social change.” “Thinking of a holistic action plan that will cater to our communities.” “What I can do to implement healthy living in our community.”

Module content: initial intervention ideas

Preliminary community intervention idea	“Gifts”	“Issue”	“Change”
Running a healthy food store featuring health promotion material	Branding skills Communication	Lack of healthy lifestyles education Inaccessible knowledge of prediabetes prevention	Knowledge Increasing awareness of healthy lifestyles and prediabetes prevention
Organising a sports day for people aged 20-40 with different cultural sports	Athletics Organisation Community capital Strong Pasifika cultural identity	Physical inactivity in adults Lack of opportunity for sport	Behaviour Increased physical activity
Community cooking workshops and community events	Cooking skills Passion for food Pasifika culture	Unhealthy food served at community events and feasts Low food literacy skills	Behaviour & knowledge Healthier diets and learned cooking skills Socio-political Redefining norms at Pasifika community events

Making innovating health promotion material	Marketing	Lack of healthy lifestyles education Inaccessible knowledge of prediabetes prevention	Knowledge Increasing awareness of healthy lifestyles and prediabetes prevention
Organise and *Amazing Race, p*rediabetes prevention edition	Organising games and events	Inaccessible information on prediabetes prevention	Knowledge Increasing awareness of healthy lifestyles
Facilitating the PPYEP with a new cohort of participants	Facilitation Youth empowerment programming Leadership	Lack of motivation to make change Opportunity to be involved in prediabetes prevention Lack of continued services	Service sustainability Supporting service organisations and programmes Knowledge Increase the capacity and capabilities of participants
Organising a step-count challenge	Community organising Sports	Physical inactivity in adults	Behaviour Increased physical activity

Figure 24: Gift + Issue = Change module

Module II.IV S.M.A.R.T. Goals

Key youth participant outcomes	• Refined the preliminary community intervention ideas using the S.M.A.R.T. Goals framework (256), where the M (measurability) was the most effective • Thought critically about the practicality and implementation of their ideas and how to "activate communities" for within each context • The Henderson group was concerned about how to embed one intervention in their diverse communities effectively • The Henderson group chose one group intervention to further co-design while the Tokoroa group has less consensus and did not decide upon one idea
Youth quotations	"Talk about all the different ideas we all had." "Think about how to do a community project." "How we can make our intervention work." "It made us think- how can our plan be realistic? Will this actually happen according to our plan?"

Module I.V Seven-steps

Key youth participant outcomes	• Solidified the co-design process and the groups generated specific community intervention implementation roadmaps • The "aims," "responsibilities," "roles" and "resources" were the most useful steps for developing the community interventions. • Tokoroa developed *Seven-steps* plans for four ideas, then decided upon which they were going to progress
Youth quotations	"Why allocating different people different tasks is important." "Making and creating an intervention plan to prevent diabetes." "The different roles of planning." "What we actually need to do." "How detailed a plan must be for an event to happen." "How to use the people I know to help us out."
Module content: key "steps."	**"Aims:"** clarified the co-design process overarching objective **"Roles:"** recognises that successful interventions harness the strengths of individuals in the group. **"Responsibilities:"** established concrete tasks for the preparation and implementation of the interventions. Self-allocating roles increased ownership and engagement of the youth. **"Resources:"** forced the youth to think of their community connections and networks outside of the programme. They pulled together a wide pool of resources and harnessed existing social capital in their respective communities.

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PPYEP: Pasifika Prediabetes Youth Empowerment Programme

PI: Principal investigator

CEO: Chief executive officer

NCD: Non-communicable diseases

T2DM: Type 2 diabetes mellitus

CBPR: Community-Based Participatory Research

CTFF: Chewing the Facts on Fat

YEP: Youth empowerment programme

MOH: Ministry of Health

MBIE: Ministry of Business, Innovation, and Employment

NCS: National Science Challenges

BMI: body mass index

NZE: New Zealand Europeans

SDOH: Social Determinants of Health

DPP: Diabetes Prevention Programme

DPS: Diabetes Prevention Study

SCML: Social Change Model of Leadership

DHB: District Health Board

FGD: Focus group discussions

PAR: Participatory Action Research

SWPICS: South Waikato Pacific Islands Services Trust

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