Food practices and diabetes management:

The lived experience of Tongan people with Type 2 Diabetes Mellitus in New Zealand

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Abstract

Type 2 Diabetes Mellitus (T2DM) is an alarming and growing global epidemic that is particularly prevalent throughout the Pacific region. T2DM disproportionately affects Pacific, Asian and Māori peoples here in Aotearoa New Zealand (NZ) and this prevalence is predicted to increase by 70 to 90 percent within the next 20 years. The focus of this research is T2DM among Pacific peoples, and in particular the Tongan community living in Auckland, NZ. Despite the range of quality standards for diabetes care and various health initiatives in New Zealand, prevalence of T2DM continues to worsen for Pacific peoples. Without the provision of culturally safe and meaningful services for Pacific peoples and their families, this health inequity will worsen with unacceptable impacts on the health and wellbeing of Pacific communities and higher health service costs.

This research explored lived experiences of Tongan people with T2DM who are living in Auckland, New Zealand. It aimed to answer the following research questions:

i. What is the meaning of being Tongan with T2DM in New Zealand?

ii. What are the factors that determine the food practices of Tongan people with T2DM in New Zealand?

iii. What can we do to help Tongan people with T2DM better manage their diabetes?

iv. What strategies can help improve food practices and diabetes management of Tongan people with T2DM in New Zealand?

This research is grounded in talanoa, a Pacific research methodology and method that facilitates participants to tell and share their stories in their own language. This research also draws on Heidegger's hermeneutic phenomenology to guide data analysis and interpretation. The researcher, a Tongan dietitian who has lived in New Zealand for over 30 years, brings her own pre-understandings and interpretive lens to the thinking and writing. The process of gathering and interpreting lived experiences happens through talanoa and the hermeneutic circle of continuously integrating parts and the whole. It

builds upon Tongan values of listening to stories of and seeking to find the meaning through interpretation of those stories.

The study participants were recruited through Tongan church leaders and the communities in Auckland. The research was in two phases. Phase 1 was individual talanoa with five Tongans who had T2DM. In phase 2, insights from the interpretation of phase 1 talanoa were presented to three group talanoa with 17 Tongans with T2DM and family members. The purpose of these group talanoa was to work with Tongan people to strategise a way forward, with a focus of 'what can we do" and/or 'how can we help make that happen', to improve the health and wellbeing of Tongans who have T2DM and, in doing so, of the wider Tongan community.

This research found that Tongans with T2DM could have had diabetes for many years before they received a diagnosis. That meant that they were not aware of their risk of worsening T2DM and/or diabetes complications. Participants only sought medical help when they experienced some intolerable physical pain. This research also found that Tongans with T2DM recognised the significant impact of Tongan cultural values, family, church and community structures, and roles in diabetes management. For example: who was working, who was buying, who was preparing, what was available, what was being served and at what time, the occasion, who the meals were shared with, and the types and purpose of gifts. Findings also highlighted that diabetes services require a Tongan worldview and a holistic approach that encompass mo'ui lōtolu, wellbeing of sino (body), 'atamai (mind), and laumālie (spirit/soul) to fulfil fatongia (duty/obligations) tauhi vā (maintain relationships), faka'apa'apa (honours/respect) and serve others. Food practices and diabetes management was never about an individual. It was always about their children, spouse, extended family, friends, church and community in New Zealand, Tonga and overseas.

The participants recognised that the loto (heart) is the centre of authority, in deciding what to accept and reject. The heart makes the connection with the mind and the soul/spirit. It requires a Tongan heart (loto'i Tonga), loto lelei (good heart), and willingness to put knowledge into action. They acknowledged the importance of learning and gainng knowledge through talanoa, sharing lived experiences and receiving practical and meaningful information that involves family, church, and community. Food

practices that they grew up with in Tonga may no longer be applicable. As Tongans transition into the New Zealand system, food cultural practices need adapting so they are fit for purpose. There are possibilities for modifying practice to enhance the ability of service providers and the Tongan community to get the benefit of talanoa and contextualised services.

This study adds knowledge and new understanding to food practices and diabetes management of Tongan with T2DM. The concept of Tongan food basket, ***Kato Polopola*** captures the Tongan worldview. This encapsulates talanoa and weaving a holistic approach that is fundamental to mo'ui lōtolu: that is wellbeing within the collective nature of tauhi vā, fulfilling fatongia at all levels, within an individual, famili (family/household), kāinga lotu (church), kāinga (extended family), and kāinga (community) and the diabetes health services. It recognises the central role of the loto (heart), the importance of Tongan cultures and maintaining an authentic relationship (vā). Kato polopola holds all the complex factors together as a whole. It is about no one thing; it is about all the strands woven together held by 'ofa (love/heart), 'ilo (knowledge/mind) and lotu (prayers/spirit). Tongan with T2DM need meaningful information and appropriate support to enable commitment for sustainable behavioural changes.

This study is the first research that explores lived experiences of Tongan people with T2DM using a combined talanoa and hermeneutic phenomenology approach by a Tongan for, and with Tongan people. This research makes a significant contribution by allowing non-Tongan's diabetes service providers to develop talanoa-like approach; that is, an unstructured approach that allow opportunities for Tongans with T2DM to share their stories, lived experiences, realities, and gain insight into how Tongans think, interpret their situation and what matters to them in this time and space.

Further research is proposed for talanoa participatory action research to work with Tongans who have been diagnosed with T2DM (and their families, church, and community) to plan, act, and reflect on diabetes management strategies, work with health providers in planning, implementing, and evaluating changes to how diabetes care is delivered to Tongan families with T2DM.

Contents

Glossary

Ako	To learn, study, educate
Ako'anga	Place for study, learn
Anga faka-Tonga	Tongan way of living or Tongan culture
'Api	Home/Household
'Api 'a e ako'anga	Home is centre/place for learning/education
'Atamai	Mind
'Eiki	Lord, higher ranked, superior status, chiefly position.
Faifekau	Church minister, pastor, priest
Fakaafe	Feast
Faka'apa'apa	Respect, honour
Faka'ehi'ehi	Prevention
Fakahinohino	To explain, demonstrate
Fakalangilangi	Honour
Fakamā	Shame; embarrassment
Fakatātāa'i	To demonstration, act
Fakatōkilalo	Humbleness
Fakavahavaha'a	Creating a sense of competition
Fakafalemahaki	Hospital/Clinical services
Falemahaki	Hospital
Fāmili	Family, kin group, members of household
Fānau	Children
Fanongo	Listen
Fātongia	Duty, obligation, roles, responsibilities
Fesiosiofaki	Envy

Fetokoni'aki	Reciprocal, mutual assistance and support
Fonua	Land, country, territory, place, afterbirth placenta
Founga	Method, strategy and ways to do things
Ha'a	Group of genealogically related titles
Hou'eiki	Royal chiefs, nobility
Ifo	food – tasty, yummy, nice
'Ilo	knowledge
'Inasi	Ancient first fruit of ceremony, allocation
Kāinga	Bilateral relation, extended family
Kāinga lotu	church fellowship, church family
Kato	Basket
Kato Polopola	Food basket
Kavenga	Burden, load of responsibilities
Kiliniki	Clinics
Koha	Māori term for donation, gift
Laumālie	Spirit, soul (inner being)
Liliu	Change
Loto	Heart (mid-heart)
Loto lelei	Good heart
Loto'i Tonga	Tongan heart
Māfana	Inwardly warm feelings
Mahu'inga	Important, essentials
Mahu'ingamālie	Meaningful
Mālie	Energizing of spirits to a positive state of enlightenment.
Mana	Spiritual/supernatural power
Me'akai	Food

Me'a'ofa	Gift
Misinale	Annual church donations
Mo'ui lelei	Good health/life
Mo'ui lōtolu	Health/life in threefold – body, mind, and soul
Mo'unga	Mountains
Noa	Zero, anything or nothing in particular
'Ofa	Love, generosity
Polokalama	Programme
Pōtalanoa	talking, conversation, exchange, sharing and resolving of relationships of people who know each other.
Puaka	Pig
Pule'anga	Government
Setuata	Steward, representative of the church minister/priest
Siasi	Church, group of people belong to religious and belief.
Sino	Body, context of physical
Sivi	Test, examine
Suka	Diabetes, sugar in the context of table sugar, sweet
Tala	To tell or to talk.
Talanoa	Talk/open informal or formal conversation, story telling.
Talanoa'i	Talking which involves analysis and evaluation
Tauhi vā	to maintain relationships, to preserve duties reciprocally
Taumu'a	Goal, objectives
Tukupa	Commitment
Uike lotu	Week of prayer/worship
Vā	distance between, distance apart, relationship, towards each other

Acronyms

ADA	American Diabetes Association
AUTEC	Auckland University of Technology Ethic Committee
DM	Diabetes Mellitus
DHB	District Health Board
DHSc	Doctoral of Health Science
MOH	Ministry of Health
NCD	Non-communicable Disease
NZ	New Zealand
NZRD	New Zealand Registered Dietitian
OHA	Oral Hypoglycaemic Agent
T2DM	Type 2 Diabetes Mellitus

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

3/08/2021

Signature Date

Dedication

This thesis is dedicated to my beloved parents:
The many sacrifices, firm foundation, values, and vision that you instilled in us

The late Sione Muimuiheata *of Folaha & Nukuhetulu, Tongatapu*
Kuo hoko ‘o mo’oni ‘a ho’o misi si’eku Tamai. I have fulfilled your dream and I hope that I have made you proud, my dearest father

The late Salote Manu-mei-Pulotu Taulanga Muimuiheata *of Kolomaile & ‘Ohonua ‘Eua & Kolomotu’a & ‘Ahau, Tongatapu*
Malo e lotu tōtōaki mo e akonaki me’a ‘aonga ki he mo’ui ni. Your endless prayers continue to guide and lead me in life.

To my beloved brother,
The late Siosifa Kava *of Tufuvai, ‘Eua. Mālō e tāsipinga lelei he fua fatongia e lotu, famili mo e nofo ‘a kāinga*

The Tongan people with diabetes and health service providers

Ki he kāinga, fāmili mo e kaungāme’a kotoa pe

Luva hoto ‘inasi, na’a ‘aonga ki hotau fatongia ke pātoloaki ‘a e Mo’ui Lōtolu.

Late Sione & Salote Muimuiheata: Photo taken in May 1993, on their first visit to NZ for my Graduation Ceremony, University of Otago, Dunedin

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[1]TAMA, ‘oua ‘e ngalo ‘eku akonaki; Kae tauhi e ho loto ‘eku ngaahi tu’utu’uni;
[2]He ‘e fakalahi ai ki he me’a ‘oku ke ma’u, ‘Aki ‘a e nofo fuoloa, mo e ngaahi ta’u mo’ui, mo e tu’umālie.
[3]Ke ‘oua ‘e mahu’i meiate koe ‘a e anga’ofa mo e fai mo’oni: Ha’i kinaua ki ho kia; Tohi kinaua ki he tohi’anga ‘o ho loto:
[4]Ko ia te ke ma’u ai ‘a e ‘ofa mo e ongoongolelei, ‘I he ‘ao ‘o e ‘Otua mo e tangata.
[5]Falala ki he ‘Eiki ‘aki ‘a e kotoa ‘o ho loto, ‘O ‘oua ‘e faaki ki ho poto ‘o’ou.
[6]Ke ke fakaongo kiate ia ‘i ho hala kotoa pē, Pea ‘e fakatonutonu ‘e ia ho ngaahi ‘alunga.
[7]‘Oua te ke lau ‘e koe ‘oku ke poto: Ke ke ‘apasia kia Sihova, pea afe mei he kovi;
(Paloveepi 3:1-7)

Tapu ki he Tolutaha’i ‘Otua, ‘Otua ko e Tamai, ‘Alo mo e Laumālie Ma’oni’oni,
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‘Oku ou fakamālō atu kiate kimoutolu kotoa pe na’a tau uma taha ‘i he ngāue mo e fakatotolo ko ‘eni. Si’i kau Takilotu, kau Toulekeleka, si’i ngaahi fofonga’i fa’e mo e tamai ‘i ho’omou loto tō, ke mou kau he fakatotolo ni. Ko ho’omou talanoa mo e vahevahe mo’ui na’e fo’u ‘aki ‘a e tohi ko ‘eni. ‘Oku hounga ‘aupito. Fakatauange ‘e ‘aonga ‘a e tohi ni kiate kitautolu kotoa, tau kau fataha ‘i hono tokanga’i mo lehilehi’I ‘a e suka. Faka’apa’apa makehe ki he fa’e mo e ongo Faifekau, kuo nau tōtau lolotonga ‘a e feinga ako ni.

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[1] My son, do not forget my teaching, but keep my commands in your heart,
[2] for they will prolong your life many years and bring you peace and prosperity.
[3] Let love and faithfulness never leave you; bind them around your neck, write them on the tablet of your heart.
[4] Then you will win favor and a good name in the sight of God and man.
[5] Trust in the Lord with all your heart and lean not on your own understanding;
[6] in all your ways submit to him, and he will make your paths straight.
[7] Do not be wise in your own eyes; fear the Lord and shun evil.
(Proverbs 3:1-7).

This was my father's favourite bible passage (above) that encouraged me through this journey. I write these acknowledgements with a thankful heart for all the prayers, love and help that enabled me to achieve this educational goal. I owe this thesis to everyone.

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Backrow: Tema, Simaima, Soana, Popua & Hulita; Front: RIP Siosifa Kava. Photo taken at the University of Auckland Graduation Ceremony, 2012

Absence from photo: Futa, Sione Niu & Mele

Ethics Approval

The ethical approval reference number 18/400 for this research was granted by the Auckland University of Technology Ethics Committee (AUTEC) at their meeting held on the 28th of November 2018.

Chapter 1 Introduction

Ko ia kotoa ‘oku ‘ilo ‘e ho nima te ne mafai, fai’aki ho ivi; he ‘oku ‘ikai ha ngāue, pe ha fakakaukau, pe ha ‘ilo, pe ha poto ‘i Lolofonua, ‘a e feitu’u ‘oku ke fononga ki ai.

Koheleti 9:10

Whatever your hand finds to do, do it with your might; for in the realm of the dead, where you are going, there is neither working nor planning nor knowledge nor wisdom.

Eccleciates 9:10

Introduction

This chapter introduce the research questions and provide an overview of the current diabetes situation in New Zealand and my personal journey to this research. It also provides the rationale and significance of this study and an overview of research context, key terms, and concepts of diabetes mellitus. My pre-understanding of diabetes that guided me to my research and the structure of this thesis.

This thesis explores the meaning of Type 2 Diabetes Mellitus (T2DM) for Tongan people in Auckland, New Zealand. The research topic was born from my intense desire to improve diabetes management and food practices among Tongans and Pacific peoples. My twenty-five years of working in primary health and community services in Tonga and New Zealand challenged me to think about my position as a Tongan, and a health professional, and to look for opportunities that would make a difference and improve the health and wellbeing of Tongan people and their families.

Research questions

This study on “Food practices and diabetes management: The lived experience of Tongan people with Type 2 Diabetes Mellitus in New Zealand” aimed to answer the following research questions:

i. What is the meaning of being Tongan with T2DM in New Zealand?

ii. What are the factors that determine the food practices of Tongan people with T2DM in New Zealand?

iii. What can we do to help Tongan people with T2DM better manage their diabetes?
iv. What strategies can help improve food practices and diabetes management of Tongan people with T2DM in New Zealand?

This research explores the experiences that influence Tongan people with T2DM in their diabetes management and food practices. The conversations with participants explored the types and amount of food consumed, eating patterns, dietary management, and religious and cultural practices to understand the meaning of food, and their lived experiences with T2DM. My research approach is grounded in talanoa, a Pacific research methodology, to provide an opportunity for Tongan people who have T2DM to tell and share their stories Vaioleti (2006, p. 1); (Vaioleti, 2013). The research also draws on Heidegger's hermeneutic phenomenology framework to guide how to work with data generated through talanoa with Tongan participants. The use of Heidegger's hermeneutic phenomenology built upon Tongan values of listening to stories of people's experience and sought meaning through the interpretation of those stories (Heidegger, 1995; van Manen, 1990). I thus seek to find out what it is like to be Tongan with T2DM in Auckland, New Zealand, the lived experiences, and factors that influence diabetes management and food practices.

The research is conducted in two phases. Phase 1 involves individual talanoa in Tongan with five Tongans who have T2DM, using hermeneutic phenomenology techniques to guide the interpretation and weaving of their stories. Phase 2 involves the taking of insights from my interpretation of those talanoa to three different group talanoa with 17 Tongans with T2DM and family members. The purpose of these group talanoa discussions is to look at the stories from the analysis of phase 1 and collectively plan strategies to improve the health and wellbeing of Tongans who have T2DM and, in doing so, of the wider Tongan community in New Zealand. Later in this thesis, I use my pre-understanding and Tongan worldview and holistic approach to recommend strategies that can help improve food practices and diabetes management of Tongan people in New Zealand. However, the context in which Pacific people live in New Zealand is unique, and the strong connection with culture, especially food practices, needs to be addressed. This research study aims to find out from Tongan people with T2DM what it

is like to be Tongan with T2DM in New Zealand and what factors influence their food practices.

The current situation

In New Zealand, most of the research and statistics combine Pacific people into one group, and they are referred to collectively as 'Pacific peoples' or Pasifika. So, where only combined research results or statistics are available, I will present these as they are still relevant for Tongans. However, wherever possible, I will present the research and statistics that are available specifically on Tongan people as this is my research focus.

T2DM is a growing and seriously health problem in New Zealand that disproportionately affects Pacific, Asian and Māori population. It is estimated that 228, 000 people (4.7 % of New Zealand population) are living with T2DM. Despite the range of quality standards for diabetes care and various health initiatives, prevalence of T2DM continue to worsen for Pacific and Māori peoples since 1990s (Yu et al., 2020). The New Zealand Health and Quality and Safety Commission (2021) reported that age-standardised prevalence of T2DM is highest in Pacific peoples, 15.1 % and projected to increase to 18.4% - 25.4% of New Zealand population within the next twenty years. This means that T2DM is three to four times more common among Pacific people compared to non-Pacific peoples in New Zealand (Tukuitonga, 2020). There is also a high prevalence of Pacific people with pre-diabetes and obesity, major risk factors for developing T2DM (Ministry of Health, 2015a). Therefore, there is an urgent need to address these inequities.

T2DM usually develops in adults, but it is becoming more common in adolescents and children (World Health Organization, 2016). Pacific peoples with T2DM experience higher rates of complications as they are diagnosed younger. Pacific peoples also have poor diabetes control, poor clinical outcomes (Coppell, 2013) and the rate of diabetes complications remains high (Bean et al., 2007; De Pue et al., 2010). A diverse range of diabetes services have been developed and delivered for Pacific peoples including individual and community-based intervention programmes (Firestone et al., 2018; Ministry of Health, 2016a; Swinburn, 2014).

In New Zealand, the District Health Board (DHB) is responsible for diabetes services that are tailored to their own local needs (Ministry of Health, 2015c, 2016a). Health Quality

and Safety Commission New Zealand (2021) report shows diabetes prevalence and complications of T2DM varies across DHBs and in the quality of care provided for people with T2DM. Dr Collin Tukuitonga (2020), a Pacific health leader and the inaugural Associate Dean Pacific at the University of Auckland urged the need to take health inequities seriously. He said that it is time to address the lack of action in preventing and managing T2DM among Māori and Pacific for the sake of everyone. Therefore, this study provides an opportunity to talanoa with Pacific people with T2DM about the lived experiences and find out how the government can improve diabetes services for them, and their families and communities.

Nutrition and dietary services for T2DM are guided by medical standards (American Diabetes Association (ADA), 2018; Boyle et al., 2016; Evert et al., 2014). In New Zealand, diabetes dietary services focus on individual assessment and management plan tailored to individual needs in primary and secondary care settings (Ministry of Health, 2014, 2015c). There is a small number of dietitians working in primary health care services (Howatson et al., 2015). General Practitioners (GP's) and nurses believe there were inadequate dietary services available to support patients with, or at risk of long-term conditions including T2DM (Parry Strong et al., 2014). However, dietetic service depends on the availability of funding to be able to deliver a flexible dietetic service at primary health care services (Beckingsale et al., 2016; Ministry of Health, 2016a). In my personal experience as a Pacific diabetes dietitian working at primary health care setting, diabetes dietary service funding does not allow enough time for an in-depth understanding of T2DM patient's situation. Pacific peoples with T2DM often attend their appointment without family support. This is a challenge as Tongan and Pacific people live and eat with family (including extended family), and in church and wider community contexts (Bean et al., 2007; Finau et al., 2004; Lotoala et al., 2014). In addition, lack of cultural terms for nutrition and health literacy among Pacific people with T2DM is known to lead to misinterpretation of important diabetes treatment and food practices (De Pue et al., 2010; Lotoala et al., 2014; Ministry of Health, 2015c).

Researcher's Lens: My positioning as an Insider

My path on this research journey began with my own experience of growing up in Tonga, then migrating to New Zealand in search of better educational opportunities. My mother

(RIP) had T2DM, as did other close friends and relatives. As a Pacific New Zealand-registered dietitian (NZRD), a diabetes specialist with 25 years of dietetics practice in Tonga and New Zealand, I am concerned with the high prevalence of T2DM and Non-communicable diseases (NCD) among Pacific people. Most of my career as a dietitian has focused on diabetes, and that has fueled my passion and desire to support dietary services for Pacific people and especially, Tongans.

It is important to locate myself within this research. In this study, I bring my own lived experience of a family member with T2DM. I know the struggle to maintain effective control for Tongans who live in Auckland with its Western ways, while at the same time trying to hold to Tongan values.

My personal story and family members lived experience with T2DM

My mother was diagnosed with diabetes in Tonga before she migrated to New Zealand. I remember how she was on different types of tablets to treat her diabetes as well as other medical conditions like high blood pressure and heart disease. As a young child of eight years old, I did not know how to help my mother especially when she blacked out. I could not do anything apart from cry and call her name. These were scary life experiences especially for me as she often fainted and became weak. Reflecting on situation and recognising that none of my sisters and brothers knew how to help her, that (experience) I decided my pathway in health career.

In Tonga, food for people with diabetes prepared differently to the rest of my family. My mother would have boiled banana, breadfruit, or pumpkin while the rest of us would eat taro, yams or kumara cooked in coconut cream. In New Zealand, our family food choices and mealtimes were different to what we had in Tonga. There were a greater variety of carbohydrate foods, processed food like cereals, canned fruits, sweet sugary beverages and too many choices available compared to back home. My mother struggled to control her blood sugar and food choices in the New Zealand environment. She lived in Auckland, an urban area with takeaways and convenient food readily available compared to a village life in Tonga, where food was fresh, home prepared and consumed with rest of the family daily.

Preparing and serving food are tasks expected of Tongan women. My mother's role in food preparation changed as she grew older in New Zealand, and she relied on others for her meal. Tongan women are the guardians of moral stability and spirituality in the home. This is also part of my Tongan psyche. There is a saying: "Ko e 'api 'a fafine" (the place of the women is the home). This had a negative impact on my mother as she felt that she could not fulfil her fatongia to the family, church, and community.

My role in the Tongan church and community in New Zealand

My faith and religion also resonate with my teaching and philosophy of giving back to the community. I am actively involved with the Tongan church and community in different roles. Something I learnt growing up in Tonga - we may have limited resources, but we have unlimited potential as there nothing is impossible to God. I understand the values of Tonga's motto "Ko e 'Otua mo Tonga ko hoku Tofi'a" meaning "From God and Tonga I descend" and, from my Methodist upbringing, "Ko Tonga mo'unga ki he Loto" meaning "Tonga's stronghold is its heart".

When I grew up in Tonga, food was always an experience of sharing with family, with neighbours, with whoever came. Food was always fresh and cooked in traditional ways. Later, the convenience of starch-laden foods such as bread, noodles, flour, and canned food began a movement towards a more Western-style diet. When I moved to New Zealand, I lived with my mother. She always took her diabetic medication and ate traditional Tongan staple food. However, whenever we attended a Tongan feast at church or at a community function, my mother would eat food often with high fats, and sugary food and drinks, which would make her blood sugar level higher than the normal range. For her, it was more important to enjoy the food shared, then fix her blood sugar for her diabetes. This is a common practice shared in the stories told by many Tongans with T2DM.

My role as a Tongan Pacific Dietitian

I grew up in Nukuhetulu/Folaha, attending Folaha Government Primary School then Queen Salote College before receiving a New Zealand Scholarship for further education. I completed the University of Otago nutrition and dietetic programmes, worked as a Nutritionist for the Ministry of Health in Tonga. My education has enabled me to help

others - as my late father always told me *"Ko e akó ke 'aonga".* Nutrition and dietary services were an identified need in Tonga. I saw being a dietitian as an opportunity to help my mother, my family, and church, community both in Tonga and in New Zealand. I wanted to be 'aonga (useful) and add value in conducting my fatongia (duty and obligations) and tauhi vā (maintaining relationship) with everyone that I would serve. Having a good career was one of my life goals, giving me purpose. I knew that knowledge and good education is a blessing through which I can to others.

The growing health problems particularly with diabetes (T2DM) among Tongans and the Pacific community in New Zealand and in the Pacific region have encouraged me to pursue my interest in improving T2DM management and food practices among Tongans in Auckland. Ninety percent of people that I see in my clinical practice have T2DM. In my experience, Tongan and Pacific patients' personal stories and the complexity for them of managing diabetes and food practices need to be heard. Life is precious, and our older generations deserve the best care, but somehow there is a mismatch between diabetes services and personal diabetes management. As a Tongan working with the Tongan community, it is important to me to have a meaningful, culturally safe diabetes service for Tongans and the wider Pacific community.

Tongan people with diabetes, may carried out daily testing of blood sugar, and attended appointments with non-Tongan doctors and nurses. A family member needed to accompany my mother for her appointment as she could not converse in English. This was unlike in Tonga, where she would catch public transport, and did not need a translator as doctors and nurses were Tongan. In Tonga, she always looked forward to her hospital outpatient clinics as a social gathering to catch up with her friends, family members and kāinga (relatives). I remember how she came back from her hospital appointments and told us about who she met up with at the hospital clinic. Diabetes review was either once or twice a year, and there was no need to test her blood sugar at home. Medical services in Tonga were free of charge for Tongan people. In New Zealand, it was an extra effort for my mother to manage her diabetes, watch her food intake, keep a record of blood glucose tests, and attend more regular diabetes reviews for which she had to pay to see the doctor and nurse.

Rationale and significance of the study

My mother's story is not unique. Diabetes is a major cause of premature mortality and disability among Pacific people in New Zealand. The prevalence of T2DM is significantly higher in Pacific, Māori, and Indian populations (Ministry of Health, 2021) than other ethnic groups in New Zealand (Atlantis et al., 2017). Pacific people are more likely to live with diabetes complications because they were diagnosed with diabetes at a younger age than other ethnic groups in New Zealand (Beig et al., 2018). In addition, the prevalence of risk factors for T2DM such as prediabetes and obesity are also highest among Pacific peoples (Coppell et al., 2013; Firestone et al., 2020; PwC, 2021; Tukuitonga, 2012).

According to the 2019 Global Burden of Disease Study of 195 counties, diet is the single leading risk factor for death (IHME, 2019). Food and nutrition therapy is integral to diabetes care and management (Alhazmi et al., 2014; Beckingsale et al., 2016; Ricci-Cabello et al., 2013). The New Zealand health system aims to focus on services that will achieve better health outcomes for people living with diabetes (Ministry of Health, 2016a). Although Pacific people is one of the priority population groups for diabetes services, diabetes programmes need further adaptation to meet the needs of Pacific people with diabetes.

The findings are potentially significant because they will inform the government and state services about strategies that may help improve food practices and diabetes management of T2DM in New Zealand.

Research context

Research population

In Manu'atu (2000) research thesis, she argued that using the term "Pacific Islands" undermines Tongan wellbeing by erasing differences between Tongans and other Pacific groups in New Zealand (p. 2). Other Tongan researchers in New Zealand ('Ahio, 2011; Fehoko, 2014; Fuka-Lino, 2015; Kalavite, 2010; Latu, 2009; Teisina, 2012; Vaka, 2014) focused their studies on Tongan people. The research population for this study is Tongan people in Auckland, New Zealand. There was a deliberate decision and preference to

focus this research within the Tongan community instead of the wider Pacific Islands community, given my own background.

It is important that I make my own background explicit, for this is the lens of my own understanding. While it is likely that the recommendations will be equally useful for other Pacific groups, the focus is explicitly Tongan. I have chosen to focus on Tongan people for this research, recognising that I was more likely to get commitment from participants if they perceived this research would benefit their own community. Further, my own interpretive lens comes from the cultural historical horizon (Gadamer, 1993) of being born in Tonga, growing up in Tonga, and being very active in the Tongan church and community in Auckland. In addition, data collection and talanoa are likely to be more in-depth as I am Tongan and have the same cultural background as the research participants. It is also beneficial for hermeneutic phenomenology, an interpretive approach, as data analysis and interpretation of participants' texts and transcripts can be in Tongan. Being an insider within the Tongan community is also beneficial to this study. As the researcher who has dwelt with the data and offers the written interpretations,

Tongan community in New Zealand

The number of people identified as Tongan in the latest census were 82,389 people, making up 1.7 percent of New Zealand population. It is the third largest Pacific ethnic group in New Zealand (Statistics New Zealand, 2018). The Tongan population is youthful with a median age of 20.5 years old, compared to 23.4 years old for Pacific population. There is a high proportion, 64 percent of Tongan people were born in New Zealand. Furthermore, 76 percent of Tongans reside in the Auckland region where the participants for this study were recruited. The number of English speakers was 90 percent and 39 percent spoke two languages. Moreover, 53 percent of people aged 30 – 64 years old and 44 percent of people aged 65 years old and older could speak two languages, the age groups for this study.

Religion plays an important role in the spiritual wellbeing of Tongans and is central to the Tongan way of living and cultural practices both in Tonga and in New Zealand (Fakahau, 2020; Fehoko, 2020; Koloto, 2017; Vaka, 2014). Eighty five percent of Tongans in New Zealand affiliated with a religion and 78 percent with Christian. All my study

participants were church leaders and members of Christian faith. Surprisingly, the number of Tongans who did not affiliate with any religion, has doubled over the past years, 15 percent compared to 7.5 percent in 2006 census (Statistics New Zealand, 2018). Therefore, church may not be the major channel of engagement with Tongan and Pacific communities in the future as reported by the Ministry of Pacific Peoples (2018b).

Pacific peoples in New Zealand

The Pacific peoples' ethnic group is the fourth largest major ethnic group in New Zealand, behind European, Māori and Asian ethnic groups. Pacific peoples are those who identify with one or more Pacific ethnic groups. Pacific peoples made up 7.4% of the New Zealand population (295,941 people) in 2018. This is an increase on the 6.9% or 265,974 people recorded in 2006 (Statistics New Zealand, 2018). The Pacific communities are fast growing, young and dynamic, and more than 60 per cent are now born in New Zealand (Ministry of Pacific Peoples, 2018a; Vaka et al., 2020).

Pacific peoples are a diverse population made up of cultures from many different Pacific Islands. The eight (8) main Pacific ethnic groups in New Zealand are Samoan (49%), Cook Islands Māori (21%), Tongan (20%), Niuean (8%), Fijian (5%), Tokelauan (2%), Tuvaluan (1%) and Kiribati (less than 1%) (Statistics New Zealand, 2018). Pacific peoples are recognized for the diversity they bring, the knowledge they impart and the contribution they make to the uniqueness of New Zealand (Ministry of Pacific Peoples, 2018a). Pacific peoples are born into a multidimensional flow of life, enhanced, and protected by relationships that build strength across multiple generations and communities. In Pacific cultures, the vā (relationship) encompasses most if not all life (Smith & Foliaki, 2020).

Tauhi vā, maintaining relationship is crucial for Tongan with T2DM. This view of the self and the relationship between self and others sees the person as totally connected with the social and environmental context, but as connected with and less differentiated from them. The emphasis is on attending to others, fitting in, and maintaining relationships with these others, sharing and fulfilling duties and obligations.

Key terms and concepts

Definition of diabetes mellitus (DM)

Diabetes mellitus (DM), more simply referred to as diabetes by the lay community, is referred to as non-communicable diseases (NCDs) or long-term (chronic) condition that occurs when there is elevated levels of glucose (or blood sugar) in a person's blood, known as hyperglycaemia (International Diabetes Federation, 2017; Mann & Truswell, 2017). DM occur either when the pancreas does not produce enough insulin or when the body cannot effectively use insulin produced. Insulin is an essential hormone that regulates blood sugar level. Hyperglycaemia over time can cause damage to many of the body's organs and lead to life-threatening health complications such as cardiovascular diseases, kidney failure (neuropathy), nerve damage (neuropathy, leading to amputation), eye disease (leading to retinopathy, visual loss and blindness) and early death (International Diabetes Federation, 2017; Nathan, 2014). In order to provide an approprate diabetes programme that can delay complications, it is important to know Tongan people's perception and interpretation of T2DM and how it affects their life within their community.

Type of diabetes mellitus (DM)

There are three main types of diabetes mellitus: type 1 (T1DM), type 2 (T2DM) and gestational diabetes mellitus (GDM) (International Diabetes Federation, 2019; Ministry of Health, 2021). This research study focuses on T2DM, which was formerly called non-insulin dependent or adult-onset. In T2DM, hyperglycaemia is the result of either insufficient insulin being produced by pancreatic beta cells and/or the inability of the body's cells to respond fully to insulin. A situation known as insulin resistance is expressed at peripheral receptor sites, inhibiting cellular glucose uptake (World Health Organisation, 2020). In T2DM, the combination of insulin resistance and a defective insulin response is associated with disorders in carbohydrate, fat, and protein metabolism (DeFronzo et al., 2015). T2DM is largely preventable and usually associated with a combination of risk factors of ethnicity, family history, increasing age, overweight and obesity (International Diabetes Federation, 2017). Modifiable risk factors include lifestyle and environmental influences which includes but not limited to obesity (excess adipose), poor food practices, physical inactivity, gestational diabetes (GDM) and high

intake of sugar-sweetened beverages (Atlantis et al., 2017; Bray & Popkin, 2014; Gojka, 2016; Ministry of Health, 2015b). T2DM is usually in older adults, but is increasingly seen in children and younger adults owing to rising levels of obesity, physical inactivity and inappropriate diet (International Diabetes Federation, 2019; Ministry of Health, 2021; World Health Organisation, 2020).

Diabetes prevalence - T2DM

Diabetes is a serious threat to global health and the number of people with diabetes is expected to increase exponentially worldwide if insufficient action is taken to address this (International Diabetes Federation, 2019). The *Diabetes Atlas* estimated that 463 million people aged 20–79 years are living with diabetes worldwide (International Diabetes Federation, 2019). The prevalence of diabetes has risen from 151 million people, 4.6% of the global population in 2000, to 9.3% in 2019. It is predicted to increase to 578 million (10.2% of the population) by 2030 and 700 million by 2045 (10.9%) (International Diabetes Federation, 2019).

T2DM is clearly a global epidemic and this high prevalence continues to be increasing concern both nationally (Health Quality and Safety Commission New Zealand, 2021) and internationally (International Diabetes Federation, 2019; World Health Organisation, 2020). The worldwide trends are mirrored in New Zealand with T2DM as one of the fastest growing long-term health conditions in New Zealand. There are about 228, 000 people, 4.7 percent of the population living with T2DM and it is predicted to increase to 390, 000 to 430, 000 people, (6.7 % to 7.4% of the population) within the next 20 years (Diabetes New Zealand, 2019). Despite increase in nutrition programmes and diabetes dietary services over the past two decades, T2DM continues to increase rapidly, with significant morbidity, mortality, and cost (Health Quality and Safety Commission New Zealand, 2021), complicated by the disparities associated with ethnicity and socio-economic status ("Untangling the complications of diabetes," 2018). Furthermore, a comparative study among Pacific people reported that the burden of diabetes is highest among Tongan women compared to other Pacific groups in New Zealand (Grey et al., 2010). Consequently, in the attempts to reduce the substantial social, health and economic burden of ill-health, T2DM is identified as one of the Ministry of Health's priorities for intensive service delivery (Ministry of Health, 2021).

It is not just NZ Pacific people who are affected. The prevalence of diabetes is increasing at an alarming rate right across the Pacific region with an estimated prevalence range of 22.6% to 47.3% (Cho et al., 2018; South Pacific Community, 2018; Tin et al., 2015; Zimmet et al., 2014) . The prevalence of T2DM in Tonga has increased over the last 40 years (Lin et al., 2016). In addition, this survey reported an increase from 5.2% to 19% between 1973 and 2012. It was also projected to be as high as 22.3% in 2020 (Lin et al., 2016). Furthermore, the International Diabetes Federation reported in 2017 that there were over 7,300 cases of diabetes in Tonga (International Diabetes Federation, 2018). However, a higher rate of 38% has been reported by the Ministry of Health in Tonga (Ministry of Health, 2015d). In addition, obesity affects 69% of the adult population with Tonga having the record for highest levels of obesity and diabetes rates in the Pacific region. Given that obesity is a high predictor of progression to T2DM, this highlights the high percentage of the adult population in Tonga who are at risk for progression to T2DM if something does not change (South Pacific Community, 2018).

Diabetes in the Tongan context

Early studies reported that diabetes was virtually non-existent in the Pacific, including Tonga (Prior et al., 1978). The prevalence of diabetes has increased exponentially over the latter 45 years (Colagiuri et al., 2002; Matoto et al., 2014).

A study of Tongan people with diabetes in the United States found that the word ‘diabetes ‘does not translate into the Tongan language (Wright & Breitenbach, 1994). Tongans classified diabetes as mahaki fakapalangi (European sickness) and claim to be one of the diseases cause by globalization and too much contact with the Western world (McGrath, 2003; Toafa et al., 1999). In addition, the Tongan concept of diabetes are characterised by symptoms, signs, and behaviours according to the nature of the diabetes illness *(‘E. Na’ati, personal communication, June 28, 2018).* The different types of diabetes are ‘Suka Kai’, food diabetes refer to diabetes caused by me’akai (food); ‘Suka Toto’, diabetes in the blood, refers to diabetes from within the family history (genealogy) including extended family; ‘Suka Mohe’ refers to diabetes symptoms of being sleepy due to high blood sugar level; ‘Suka Motu‘a’, diabetes with ageing or in old age, refers to diabetes as a disease in older people; ‘Suka Pala’, diabetes ulcers and sores, refers to people with poor diabetes control who have infections and ulcers that

are hard to heal; 'Suka Tu'usi', diabetes amputations, refers to people with poor diabetes control who end up amputation. There are some English terms and concepts that do not translate easily or exactly into Tongan.

Diabetes and food in the Tongan context

Nutrition and dietary services are part of the integrated care services for people with diabetes (American Diabetes Association (ADA), 2018; Coppell, 2013; Costacou & Mayer-Davis, 2003; Secretariat of the Pacific Community, 2011). The traditional role and socio-cultural values related to food for Tongans and in some Pacific societies diverge considerably from the way foods are recommended for the Western dietary management of T2DM (Hawley & McGarvey, 2015; Mahina, 1999; Moata'ane et al., 1996). In addition, food is something to share, to give and to enjoy rather than being a treatment, or for the prevention of diseases like T2DM (Eriksson & Lindgarde, 1991; Moata'ane et al., 1996; Muimuiheata, 2015; Niumetolu, 2007). This is explore further throughout the thesis.

My pre-understandings

As the researcher who has dwelt with the data and offers the written interpretation of it, it is important that I make my own background explicit, for this is the lens of my own understanding. As described earlier, my path on this research journey began with my own experience of growing up in Tonga, then migrating to NZ in search of better educational opportunities. My mother (RIP) had T2DM, as did other close friends and relatives. As a Pacific NZRD, and a diabetes specialist with 25 years of dietetics practice in Tonga and NZ, I am concerned with the high prevalence of T2DM and NCD among Pacific people. Most of my career as a dietitian has focused on diabetes, and that has fuelled my passion and desire to support nutrition and dietary services for Pacific people and especially Tongans. The key assumption I bring to this study is that the health service is not yet effectively supporting Tongans who have T2DM.

Structure of the thesis

This thesis consists of seven chapters as described below:

Chapter 1: Introduction

In the present chapter, I have introduced the research questions and discussed the rationale and significance of my study. I have given the reader an overview of diabetes within the Tongan population on global, regional with a focus on nutrition and dietary services for Pacific peoples and Tongan in New Zealand. **F**ollowing this, I provided the rationale and significance of this study, research context and key terms and concepts of diabetes mellitus. My personal journey and pre-understanding of diabetes has deepened my relationships with Tongan people with diabetes in NZ. This guided me to my research.

Chapter 2: Literature Review

In this chapter, I explain how I have explored the literature and existing knowledge on diabetes and the food practices of Tongan people with T2DM in New Zealand. I portray the international and national literature of relevance to this study, alongside my own experience of working with diabetes. In doing so, I explore notions such as Pacific and Tongan worldviews, social structure, and culture. The diabetes service, dietary services, and health policy for Pacific people in NZ are also reviewed and critiqued.

Chapter 3: Research Framework

This chapter outlined and provided the justification for selecting talanoa and hermeneutic phenomenology as methodology and research method that informs this study. The structure and design are in five sections. The first part positions the study within a qualitative research framework. The second part discusses the Pacific research framework and its relevance to the context of my research methodology. The third section describes the concept of talanoa as the appropriate Pacific research methodology that informs this study. In the fourth section, I introduce the reader to Heideggerian hermeneutic phenomenology and philosophical writing as a guide for analysing and interpreting the data and justify its use alongside talanoa methodology. Lastly, a diabetes expert and cultural advisory group inclusive of Tongan community

leaders along with my supervisors team, and with the researcher's pre-understanding, and Tongan heritage guided the theoretical approaches in this study.

Chapter 4: Methods

This chapter outlines 'how' I did the research. I explain ethical considerations, the recruitment process of participants, and the data collection through talanoa in two phases, the individual and group talanoa. I describe how new understandings emerged after I had done transcribing, translating of Tongan talanoa, the data analysis and interpretation of the transcripts of the five participants. This 'turn' in the hermeneutic circle of understanding also opened the opportunity to talanoa with myself, talanoa with data transcripts, talanoa with the group to find out what could be done for Tongan people with T2DM.

Finally, I discuss the trustworthiness, credibility, transferability, and dependability of my study.

The interpretive findings of the study are presented in Chapters 5 and 6. The findings are illustrated by quotes from the participants presented in Tongan with English translations where they were spoken in Tongan, or just in English where they were spoken in English.

Chapter 5: Findings – Individual Talanoa

This chapter presents the research findings from individual talanoa with five Tongan church and professional leaders who have lived the experience with T2DM. The participants shared their stories about how they found out that they had diabetes and how they then lived with diabetes within a family, church, and community in the NZ environment.

Chapter Six: Findings – Group Talanoa

This chapter presents the research findings from talanoa with 17 Tongan church and community leaders with T2DM and family members (spouse). Insight from phase 1, were presented to three group talanoa who have lived the experience with T2DM to strategise a way forward to help Tongans with T2DM better manage their diabetes and

help to prevent the development of T2DM among Tongan in NZ. The findings are illustrated by quotes from group participants presented in Tongan with English translations where they were spoken in Tongan, or just in English where they were spoken in English.

Chapter 7: Discussion and Conclusion

This chapter discussed the findings and how they add to the current body of knowledge. I introduced the analogy a Kato Polopola, food basket to demonstrate the complexity of diabetes management and food practices for Tongans, and the holistic approach to achieve mo'ui lōtolu, wellbeing in sino, 'atamai and laumālie (body, mind and soul). The implications of the study and recommendations for the way forward with how to improve diabetes services to support prevention and management of T2DM for Tongans in NZ. I also discuss the strength and limitations of the study with my personal reflections and conclusion on this research study.

Chapter 2 Literature Review

"...my western education has not caused me to shift from a belief and reliance in the supernatural...I am a Tongan woman of the commoner class, and although schooled in western ways, I continue to see myself as part of an organic unity, not as a chance result of natural selection at work in a world devoid of supernatural guidance..."

Helu-Thaman (2003, p. 1)

Introduction

This chapter explores the literature and existing knowledge on diabetes and the food practices of Tongan people with T2DM in New Zealand. It also outlines the contextual factors that impact the research. The literature reviewed was sourced mainly via online databases such as CINAHL, Medline, PubMed, Ovid, JSTOR, SAGE, Ministry of Health, World Health Organization, International Diabetes Federation, Diabetes New Zealand, American Diabetes Association, and Google Scholar using T2DM as the main keyword with other relevant words like Tonga, Pacific, food, diet, management, education, indigenous, talanoa, hermeneutic, phenomenology, and qualitative were also included. There was little literature on Tongans with T2DM. This strengthens and highlights the need to research this important area to inform health-care services and policy development in relation to food practices and diabetes management. The literature reviewed focused on publications from 2000 to 2017 and included some pre-2000 literature that was relevant to my research questions and study population.

I agree with Smythe and Spence (2012) that the manner of reviewing literature needs to be congruent with the particular research methodology. In this research context, talanoa and hermeneutic phenomenology refers to the art of interpretation of the lived experiences of Tongan people with T2DM through listening to their stories and reading texts. The main purpose of exploring literature in hermeneutic research is to provide context and provoke thinking (Smythe & Spence, 2012). I seek to understand how the

experiences of Tongan people with T2DM have been shaped by the New Zealand health system and diabetes services in this time (tā) and space (vā). The Tongan concept of tā is the marking of time in vā, where tā and vā are inseparable (Mahina, 2017). In contrast to their situations lived in Tonga, this research focuses on each participant's life in New Zealand. The focus is the lifeworld's of Tongans with T2DM as experienced in everyday situations and relations (van Manen, 1990). Smythe and Spencer's work guides the interpretative analysis of data from stories captured through talanoa with the participants (2012).

In drawing on the literature, I acknowledge that I came to this study with pre-understandings and prejudices derived from own life experiences. They cannot be ignored or put aside but need to be recognised as influencing both the selection and interpretation of literature. As noted by Smythe and Spence (2012), being in the world, we acquire an orientation that is connected to and woven with history, traditions, culture and values. The literature review I present is an account of the relationship between my pre-understandings and what I read, searched for, dwelt-upon and talked about with my supervisors, an expert advisory groups, colleagues, and members of the Tongan community in New Zealand.

This chapter is presented in three key sections that make up the main parts of this research. The first section presents literature associated with the definition of diabetes, and its influences on Tongan people with T2DM. It is relevant to include literature about other Pacific populations with detailed attention to the Pacific and Tongan worldviews and their impact on diabetes management. The second section is dedicated to literature on food. It provides an overview of knowledge at commencement of this study in 2017, of the factors that determine food practices in relation to T2DM. The third section presents literature on diabetes services in New Zealand. A review of diabetes services and a study of other Pacific populations is also provided.

Tongan peoples' understanding

This study seeks to understand the meaning of T2DM for Tongan people in New Zealand. I have explained the definition of diabetes and T2DM in Chapter 1, drawing on the definition used by New Zealand health services. The literature search revealed a lack of information regarding definition of diabetes in the Tongan community. Some

literature is more than 25 years old and is included because of its specific focus on the study population and research questions.

A United States review found that Tongan people who have diabetes often do not feel sick and therefore do not seek medical treatment nor take steps to prevent getting diabetes (Wright & Breitenbach, 1994). In their retrospective review of attendance at a diabetes clinic, Wright and Breitenbach (1994) noticed an increased number of Tongans were admitted to the hospital with diabetes-related complications that could have been prevented. They found that Tongan diabetes patients understand health based on how they feel, which contributed to a lack of awareness and belief in health care prevention. Even though their study was conducted with hospital patients in the United States and was based on review of patients' medical records to assess compliance with diabetes services, I concur with their findings as supported by similar studies of Tongans with diabetes in Tonga and New Zealand.

The findings from the review cited above, are consistent with Matoto et al.'s (2014) retrospective descriptive study of 4,653 diabetes patients registered in the National Diabetes Registry in Tonga from May 2004 to 2012. They found most Tongan patients regard the absence of symptoms as being disease-free and have little concern for the importance of chronic medication and dietary or lifestyle changes if they are not feeling unwell. Finau and Finau (2003) reported the same experiences with Tongan patients seen at the Tongan Langimalie clinic in Auckland, New Zealand. The absence of symptoms means that one is well and disease free. Therefore, these patients believed there was no need to follow recommended treatment and management advice. These studies highlighted the challenges associated with a condition that is predominantly asymptomatic until T2DM is at an advanced stage and even in the onset of complications. Finau and Finau (2003) reported Tongan patients' attitudes during discussions of the danger of diabetes: they would rather enjoy life as they often responded with "We are all going to die someday" so why not enjoy life choices now and perhaps die with diabetic complications later (p. 88). I agree with Finau and Finau (2003) that Tongans' deep rooted life attitudes affected compliance, especially with T2DM that has no perceived symptoms, and as yet, no incapacitating effect. Matoto et

al. (2014) recommended the need for more effective strategies that engage with patients and encourage ownership of their disease even in the absence of symptoms.

Simmons et al. (2004) conducted a two-year church-based structured diabetes awareness intervention programme with two Samoan and two Tongans churches in South Auckland with 516 participants. Risk of T2DM was high between both ethnic groups. This study found that increasing diabetes knowledge alone was not associate with healthier lifestyle choices for both Tongan and Samoan community groups.

Another study by Barnes et al. (2004) of Tongan and European patients with T2DM in Auckland found a significant difference between the way Tongan patients conceptualise their illness and treatment compared to European patients. They found that Tongan T2DM patients believed diabetes to be more cyclical, acute, and caused by external factors such as God's will while European patients viewed diabetes as a chronic disease. This is consistent with Wright and Breitenbach's (1994) study which found that a category name for chronic diseases did not exist in Tongan, and that Tongan diabetic patients felt that destiny is left to the Gods and spirits. Both Barnes et al. (2004) and Wright and Breitenbach (1994) emphasised the importance of exploring a patient's illness beliefs to find out what affects adherence to treatment. They believed that Tongan patients were less likely to take diabetes medication and follow a diabetes dietary management plan.

Furthermore, since the prevalence of T2DM is higher in Pacific peoples both within the Pacific region and as migrants to New Zealand (Atlantis et al., 2017), it is important to include literature from the wider Pacific region. This is relevant, the understanding of perceptions, knowledge and lived experiences of Pacific peoples. A qualitative study in Australia that explored the knowledge of, and attitudes to, diabetes of i-Taukei Fijian, found that some participants were not able to define diabetes (Dearie et al., 2019). There was a general lack of knowledge and understanding about diabetes in the community, which was seen as barriers to diabetes management. Another study identified that most Pacific Island patients in Auckland, New Zealand, could not name the nature, symptoms, or complications of diabetes (Simmons et al., 1994). These studies recognised the need for diabetes services to take into account the perception, knowledge, understanding, interpretation, and the meaning of diabetes in the target

population, such as the Tongan people in New Zealand. Previous studies indicated that Tongan and Pacific cultural perception, belief and interpretation of health played an important role in diabetes management (Barnes et al., 2004; Foliaki & Pearce, 2003). Therefore, it is important to explore literature about the definition and understanding of health with detailed attention to the Pacific and Tongan worldviews, beliefs and culture, and their impact on diabetes management.

Defining and understanding health

The World Health Organization (WHO) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organisation, 2006, p. 100). This definition is widely used as Western concept that does not include the cultural, social and health constructs of Tongan communities (Finau & Finau, 2003; Finau et al., 2004). Therefore, it was expanded to include health as a state of being with physical, cultural, psychological, economical and spiritual attributes and not simply the absence of illness (Rogers, 1995). Vaka's (2014) doctoral thesis investigated the meaning of mental illness for Tongan people in New Zealand. It included a critical analysis of literature that defined health and the concept of illnesses and disease (pp. 22-27). He found that health is a complex concept which varies from culture to culture, and highlighted the need for mental health providers to understand how mental health and illness are defined, understood and experienced by Tongans. Vaka (2014) emphasized challenges associated with applying a biomedical linear, individually focused Western worldview to a circular, collective, traditional Tongan community approach to mental health in New Zealand (Vaka, 2016; Vaka et al., 2020)

Indigenous peoples including Aboriginal, Māori, and Pacific peoples define health as a holistic relationship between physical, mental, social, and spiritual wellbeing (Bloomfield, 2002; Health Research Council of New Zealand, 2014; Ihara & Vakalahi, 2011; McCarthy et al., 2011; Pulotu-Endemann, 2001; Tu'itahi, 2007; Vaka, 2016). It is associated with being able to function, carry out one's duties and stay connected with family, community, and society. Southwick et al. (2012) reviewed the primary care services for Pacific people in New Zealand and reported that study participants viewed 'health' as being underpinned by spirituality and family relationships. The concept of spirituality was a significant aspect of the understanding shared among many of the

groups, indicating that health is more than a physical thing (Ihara & Vakalahi, 2011; Southwick et al., 2012). Therefore, involving families and communities in collaboratively improving the health of all their community members, with input from experts who share that approach, will provide services that align with this Pacific worldview.

Pacific worldview

In the Pacific context, health and wellbeing tend to be used interchangeably. They are associated with wholeness and a holistic worldview that encapsulates the context of health and wellbeing in relation to physical, spiritual, mental, cultural, and social dimensions (Akbar et al., 2016; McCarthy et al., 2011; Vaka, 2014). There are links and relationship between nature, people, non-living and living (Tamasese et al., 2010). Many Pacific people draw their sense of health from the quality of their relationships within their collective contexts (Agee, 2013; De Pue et al., 2010; McGarvey & Seiden, 2010; Vaughan et al., 2018). They are part of a whole, connected through lines of kinship and genealogy, interdependent through social and cultural links between people and environment, reinforced by tā and vā (Ka'ili, 2005; Mahina, 2017; Tu'itahi, 2005). From community fono with over one thousand Pacific peoples around New Zealand, The Ministry of Pacific Peoples found that Pacific peoples are self-determined and confident within their communities. They strived for a better quality of life instead of focusing on disease, with a holistic approach to the wellbeing of families and communities (Ministry of Pacific Peoples, 2018a). It highlights the worldview of Pacific people, their interpretation of themselves and their relationships with others. Various Pacific health models highlight that family (including extended family) was the most important group in the lives of Pacific peoples (Pulotu-Endemann, 2001; Tu'itahi, 2005; Vaka, 2014). Pacific families operate in a system of connections, interconnections and interdependent relationships that contribute to one's overall health and wellbeing. The Ministry of Pacific Peoples (2018a) also confirmed that Pacific cultural values form a strong foundation for building and maintaining resilient Pacific communities in New Zealand.

However, Kolandai-Matchett et al. (2017) reported that Pacific cultural values can also affect the health and wellbeing of Pacific communities in New Zealand, especially those with gambling problems. They identified effects arising from the values of collectivism,

gift-giving, gambling-based fundraising, patriarchy, beliefs about blessings, and sports celebrities. A high prevalence of risky and problem gambling were high among Māori and Pacific adults (Abbott et al., 2018). Kolandai-Matchett et al. (2017) also reported that the gambling harms experienced by Pacific people were similar to those identified amongst the general population; however, the cultural contexts in which some harms manifested among Pacific peoples were complex. In addition, Pacific peoples have experienced a strong link between poverty, limited financial resources and unhealthy lifestyles (Ministry of Pacific Peoples, 2018a; Pacific Perspectives, 2015). Pacific people had strong connections between high levels of stress and poor health, especially when members of the community cannot provide for their families (financial obligations), or have failed to maintain relationships and meet community obligations (Abbott et al., 2018; Kolandai-Matchett et al., 2017). Limited financial resources, sometimes Pacific families don't have choice due to circumstances and other social determinants where they need to put food on the table for their family and buying cheap inexpensive food (McDonald in large quantities or fatty meat cuts flaps) can feed large families. Cheaper options maybe unhealthy but can feed whole family and fulfil fātongia (duties and responsibilities).

Qualitative research undertaken with Pacific peoples has revealed that poor health outcomes were not due to lack of knowledge but a lack of economic resources (Ministry of Pacific Peoples, 2018a; Southwick et al., 2012). Despite socio-economic situations, Pacific families are committed to doing the best for their children and families in New Zealand (Faleolo, 2019; Pacific Perspectives, 2015). When applying this worldview to dietary and diabetes health services in New Zealand, the approach must be holistic which includes, family, culture, listening and the spiritual aspects of living. In my role as a Pacific health professional, I contribute with Tongan language, and with spiritual and cultural connections with family and community, as well as my nutrition and dietary knowledge. I can articulate a combined understanding of both the realities of the health services and the reality of living as a Pacific person with diabetes.

Tongan worldview

Health is literally translated in the Tongan language as 'mo'ui lelei'. Siosiane Bloomfield (2002) researched the practices of traditional healers in Tonga and discussed the

translation of ‘mo’ui lelei’ as ‘good life’ or ‘good health’. This is aligned with the WHO definitions of health rather than Tongan social and cultural interpretations, and is consistent with Leslie’s (2002) finding when investigating health messaging and cultural constructions of health in Tonga. She found that, in most situations, health promotion strategies consisted of a relatively straightforward translation of Western-based biomedical information and that the concept of health employed in biomedical literature did not exist in the Tongan dictionary. The words ‘mo’ui lelei’, literally translated as ‘living well’, has been used is some contexts and has been used to rectify traditional notions of good social relations (Leslie, 2002). The essence, the Tongan core values, are embedded in maintaining good relationships and strong connections with family and community (Tu'itahi, 2005). This idea makes sense since, as an illustration, having mo’ui lelei, good health, would lead to mo’ui fuoloa, living long to fulfil duties and maintain relationships. Therefore, it is essential to be fit and well for the main purpose of supporting and contributing to the collective wellbeing of family and community.

Bloomfield (2002) described how “life is threefold, as the Tongans would say, sino, ‘atamai mo e laumālie’ (body, brain and spirit)” (p. 33). She emphasised the importance of fatongia (duties), as good health exists when all duties to families (including extended families), land, village, society, and country are fulfilled. These duties are fulfilled in different social context and levels of relationships and the relationship with the land is important in defining health in the Tongan context. Bloomfield (2002) highlighted mālie (harmony) in terms of the balance, ‘monū monitonu’, achieved when duties are fulfilled. Tongan academic Mahina (2002) supported Bloomfield’s threefold interpretation, using the words ‘physical’ for ‘body’ and ‘mental’ for ‘brain’, with a focus on ‘social tendencies’ rather than spirit. He emphasised health in term of ‘mālie’ as in ‘harmony’ and ‘beauty’ and extends his definition of health into the relationship between humans and the environment. Thus, a healthy environment equates to a healthy community and healthy individuals. Tu’itahi (2005) extended Bloomfield’s (2002) and Mahina’s (2002) definition of health to develop a health promotion approach. The fonua model consisted of five cyclic interconnected and interdependent relationships of laumālie (spirit), ‘atamai (mind), sino (body), kāinga (community) and ‘ātakai (environment) within an individual that equally contributed to health and wellbeing. He included the concepts of five inter-

dependent levels of taautaha (individual), fāmili (family), kolo (local), fonua (national) within a society, where one can address specific issues to maintain a balanced sense of health and wellbeing.

In addition, there are other health frameworks and models developed by Tongans to guide research and community development protocols or the delivery of culturally sensitive mental health services for Tongan people in New Zealand (Fotu & Tafa, 2009; Ofanoa & Raeburn, 2014; Vaka, 2016). They reflect a holistic view of health and wellbeing within a collective and interconnected model. In a similar vein, Thomlinson, McDonagh, Crooks and Lee's (2004) study in rural Canadians described health as having balance in the physical, mental, social, and spiritual aspects of a person.

I support Bloomfield's (2002) threefold mo'ui lōtolu with Thomlinson et al.'s (2004) definition of health because it fits well with my research study. Health is holistic which include body (physical), mind (mental) and spiritual wellbeing. The concept of spirituality is a significant aspect of mo'ui lōtolu, indicating health is more than physical. However, I do not agree with the aspects of threefold being in balance (Thomlinson et al., 2004) as mo'ui lōtolu is based on the context of tā (time) and vā (space). An individual operates within a collective and relational context with the inclusion of social aspects in terms of fulfilling fatongia, duties and obligations. It is a collective wellbeing interconnected with the environment (Mahina, 2002; Tu'itahi, 2007) tauhi vā and social commitments to family, communities and society ('Ahio, 2011; Bloomfield, 2002; Ka'ili, 2005; Koloto, 2001; Leslie, 2002).

Summary

The literature revealed that the Tongan understanding of health and diabetes is different to the Western biomedical perspective. Tongans, along with other Pacific and indigenous people, have a holistic approach including sino (body/physical), 'atamai (mind/mental) and laumālie (spirit/soul); and health is context-based upon social connections with family, community, and environment. This literature confirmed knowledge learnt over 25 years ago that, in my experience, has not been fully incorporated into a holistic and collective approach to T2DM management, intervention and prevention programmes. An individual approach to health isolates the person from their experience of 'being there' in whatever way that is for them. That is how the lived-

experience perspective (van Manen, 1990) that I bring to this research differs. I recognise that to see a person 'removed' from their everyday context does not bring an understanding of 'how it is for them'.

Although there are health models and frameworks developed by Tongans for the Tongan community, it is not clear whether they adequately reflect the perspective of Tongan people with T2DM in New Zealand. Have they held 'holism' as part of dynamic understanding? Therefore, my study seeks to fill this gap through talanoa with Tongan people with T2DM and find out what we can do to improve diabetes management, minimise, and prevent the development of T2DM, prevent and minimise the development of diabetes complications, improve access to diabetes care services for Tongan peoples – by revealing what matters for Tongans with T2DM.

Food practices and Diabetes management

The association between food, diet, and chronic diseases such as diabetes, hypertension and cardiovascular disease in the Pacific has been recognised since 1970 (Pollock, 1992). Among Pacific people, it appears that modern dietary and lifestyle factors unmask a genetic predisposition for T2DM (Evans, 2002; Hawley et al., 2014; Lin et al., 2016 ; Simmons et al., 1998). The significant increase in the number of people having T2DM seems to be related to the ongoing transition from traditional ways of life to Westernisation (Bell et al., 1999; Hawley & McGarvey, 2015; Hughes, 2009). There is an increased reliance on convenience and processed foods, high energy and poor nutritional value foods, takeaways and high sugar beverages (Cacavas et al., 2011; Finau et al., 2004; Hosey et al., 2009; Zimmet et al., 2014). The rationale for undertaking this research is that knowledge of food practices, food choices, dietary patterns, and the spiritual and cultural meaning of food is essential to ensure the improvement of the quality of life and delivery of appropriate programmes for Tongan people with T2DM (Aselu, 2015; Cassel & Boushey, 2015; Scott, 2017). Dietary perception influences the type and amount of food eaten as well as how dietary information is interpreted (Chepulis et al., 2017; Provencher et al., 2009). Therefore, nutrition knowledge, cultural and personal belief may influence food practices and diabetes management of Tongan people with T2DM

This section reviews literature and knowledge about food and its role in Tongan and Pacific culture and encompasses food practices associated with T2DM. The focus is on Pacific people. I refer to studies on Tongan people where these are available. I also include, where possible, food culture and traditional ways which originated in Tonga and the Pacific and might be different from practices in the New Zealand context.

Food and culture

Tongans share with indigenous people, a view that foods are important for physical, mental, social, cultural, and spiritual health and wellbeing (Englberger, 1983; Evans et al., 2003). The traditional, social and cultural values of food in Tongan society are far more significant than the values attached to food in diabetes management and the prevention of T2DM (Moata'ane et al., 1996; Pollock, 1992). Food brings people together to share, to celebrate communal occasion such as birthdays, weddings, funerals, church feasts and offerings brow. While traditional foods may lack nutritional value, their cultural value remains very powerful (Mahina, 1999; Marriner, 2010; Vainikolo et al., 1993). Therefore, Tongan food's cultural meaning and values must be respected. It defines and shapes a person's identity, as an individual and as a member of the collective ('Ahio, 2011; Kudo, 2011; Mahina, 1999).

Leslie (2002) reported that the most important aspect of food and eating in a village in Tonga was the social and ritual importance of food as a medium of exchange, in the maintenance of good social relations, tauhi vā and demonstration of 'ofa (love), generosity and reciprocity. Hughes (2009) also reported that the Pacific diet consisted of large servings of nutritious root crop staples supplemented with coconuts, fruits and seafood. Leslie (2002) found that, traditionally in Tonga, men fulfilled their duties through food production. Over-production publicly demonstrated father, brother and son fulfilling their duties and having enough to give away as a sign of affection in time of need as well as a sign of 'ofa (love/generosity). It was also a sign of being blessed and providing an abundance of food for both the producer and the consumer. The cultural value of food also included gifting, so refusing to eat something is profoundly rude, even if it is bad for one's health (Leslie, 2002; Marriner, 2010; Vainikolo et al., 1993).

Dr 'Okusitino Māhina (1999), a Tongan academia and researcher in social anthropology also discussed the central role of food in Tongan society. He emphasised Tongan

communal ways of living in contrast to the westernised framework of individual perspectives and self-centredness (Māhina, 1999). This is fundamental to my research study as diabetes management and food practices is likely to be more effective when it incorporates Tongan beliefs regarding the social and cultural values of food within the family, church, and community. The supportive relationships, tauhi vā to facilitate lifestyle change are extremely important. As with mental health, a different approach is required and must be based within a belief framework that Tongans accept and can work with (Vaka, 2016).

Food choices and dietary changes

Tongans, like their Pacific counterparts, consume similar foods, namely starchy root vegetables, such as taro, yams, cassava and kumara, and also bananas, with protein sources coming from marine foods (Bell et al., 1999; Pollock, 1989; Su'a, 2017). Evans (2002) reported that food intake in Tonga has shifted from indigenous food items to imported foods with high fat content, such as corned beef, mutton flaps, and refined and starchy foods. Bell et al.'s (1999) cross-sectional study in three Samoan church communities in Auckland found a dietary transition has occurred for New Zealand Samoans. A shift from Samoan traditional to modern dietary patterns and a decline in the nutritional quality of the diet had occurred, especially in younger Samoans. On the other hand, the older group, aged 40 years and above, were island-born, consumed traditional Samoan food like meat, starchy staples, fruit and vegetables. Hawley and McGarvey (2015) reported similar trends in Samoa, where processed food like instant noodles, high sugar snacks and turkey tails replaced local food like fish, yams, fruits, and vegetables. The study by Evans (2002) in Tonga suggested that the change in food choices was partly influenced by affordability. They found these imported health-compromising foods were 15–50% cheaper and more readily available than the healthier, locally produced alternatives. In my experience as a Tongan dietitian, I also found that food choices are influence by social and economic factors. What types of food that is available, what is convenient, easy to prepare and what is affordable compromise the cultural values of food.

Evans et al.'s (2001) study in the Kingdom of Tonga found that Tongan people know the nutritional value of food but food preferences were based on socio-economic factors.

The study involved a total of 178 males and 241 females, aged from 12–82 years old. The survey was carried out at meetings of church choirs in Tonga. Because of the important role of church in the Tongan community, it was convenient to carry out this survey at one of the Tongan churches. According to Evans et al. (2001), Tongans, like the members of all other Pacific cultures, have food preferences that are linked to their cultural norms, practices, and perspectives.

Cacavas et al. (2011) used a mixed methods study to examine the sources of food and dietary patterns among 2,084 Tongan adolescents in Tonga and their perceptions of socio-cultural influences on their food choices. Results indicated Tongan adolescents purchased high energy food and drinks with poor nutrient levels. Similar trends in 'Western' food choices observed in other Pacific Island groups were reported by Hawley and McGarvey (2015). High energy food and drinks contributed to the high prevalence of obesity and diabetes among Pacific peoples. Since obesity and diabetes are lifestyle diseases, positive social change strategies to control the lifestyle of the Tongan people would reduce obesity and diabetes. This is supported by studies among Tongans and Pacific peoples in Tonga, New Zealand, and the United States (Firestone et al., 2018; Lin et al., 2016 ; Parks et al., 2020).

Nutrition and food knowledge

Evans et al. (2001) also investigated the assumption that education programmes would encourage lifestyle changes to improve non-communicable diseases in the Kingdom of Tonga. The study found that educational programmes have increased awareness about a healthy diet and nutritional food. However, food choices were influenced by food cost and availability. Data on the relationships between food preferences, the perception of nutritional value, and the frequency of consumption were gathered on both traditional and imported foods. The results showed that the consumption of health-compromising imported foods was unrelated either to food preferences or to perceptions of nutritional values. They suggested that diet-related diseases may not be amenable to intervention and participants did not need a nutritional information and education campaign.

Summary

While there have been diabetes services developed for Pacific people, there is no specific research on the food practices of Pacific and Tongan people with T2DM in New Zealand. Based on the literature and my lived experience as the only Pacific NZRD working in the diabetes area, the findings from this proposed research, talanoa and a hermeneutic phenomenological study of lived experiences of diabetes and what Tongan people value in terms of diabetes services may help minimise and prevent the development of T2DM in New Zealand.

Health care services in New Zealand

The New Zealand health system developed a strategy to improve the health of Pacific people with the publication of the first Pacific Health and Disability Action Plan in 2002 (Keating & Jaine, 2016). The Primary Health Care Strategy (PHCS) was developed in 2001 with the aim of improving the health of New Zealanders and reducing health inequalities (King, 2001). A useful document outlines the specific contributions to improve health outcomes. Primary Health Organisations (PHOs) were established in 2002 as part of access and service delivery for Pacific people in New Zealand. Pacific enrolments in primary care are high but results from the New Zealand Health Survey shows that the health of Pacific peoples remains poorer when compared to other New Zealanders (Ministry of Health, 2016a). Despite Pacific health being a priority over the past two decades, there are persistent and significant inequities in health outcomes for Pacific peoples. Pacific adults have higher rates of risk factors for long-term conditions. There is a disproportionate prevalence of smoking, hypertension, low consumption of vegetables and fruit, physical inactivity, psychological distress and highest rates of obesity compared to other New Zealanders (Ministry of Health, 2016a).

Pack's (2018) study explored the experiences and perspectives of Pacific PHO service providers and the managers of the services involved in primary health care provision and delivery in New Zealand. This study was part of a larger evaluation of the PHCS. The study was consistent with Cumming et al.'s (2014) positive response to the lower cost of health care services. In addition, participants recognised the need for co-ordinated approaches to heath care, which are comprehensive, culturally appropriate and flexible enough to respond to local needs. They recommended the keys for the increased uptake

and use of primary health services were the availability of wrap-around, holistically based, accessible services delivered by culturally responsive health providers. They stressed the importance of incorporating Pacific cultural values and ways of being Pacific which "go the extra mile" (Pack, 2018, p. 61) to serve clients where they live in a diversity of local and cultural contexts.

T2DM is one of the long-term conditions in New Zealand that the Ministry of Health prioritised for intensive service delivery (Ministry of Health, 2016a) . Pacific (and Māori) patients had more diabetes consultations and similar or more screening tests than European patients (Robinson et al., 2006). The quality and level of care that people with diabetes receive varies depending on where they live (Ministry of Health, 2015c). There has been a shift in health care from a reactive system with a focus on acute care to one that is proactive, which supports management of diabetes. However, the health policy does not always translate into intervention in the community and in primary health care settings (Borrows et al., 2011; Cassel & Boushey, 2015; Davis et al., 2005; Marriner, 2010).

There are significant ethnic inequities with T2DM affecting more Pacific compared to Māori, Asian and New Zealand European as discussed in chapter 1. T2DM pose a major challenge for healthcare services and impacted health and wellbeing of Pacific families. The high prevalence of T2DM indicate that New Zealand health and diabetes services are not meeting Pacific peoples' needs. My study aims to listen to Tongans with T2DM and find out about what types of health and diabetes services could improve diabetes management and prevent the development of T2DM. There is a lack of studies on specific ethnic groups, as government reports group together Tongans and others of Pacific ethnicity as 'Pacific peoples'.

Diabetes services in New Zealand

Diabetes services in New Zealand focus on reducing the burden of diabetes mortality and morbidity on the health system (Ministry of Health, 2014, 2015c). Diabetes services are complex because people with diabetes have different needs at different stages of the disease (Cumming et al., 2014). Public hospitals and secondary care provide an interdisciplinary approach of diabetes specialists including diabetologists (diabetes doctors), diabetes nurse practitioners, nurse specialists, dietitians, optometrists,

podiatrists, and oral practitioners (Ministry of Health, 2016b). Primary diabetes services provided by a diabetes management team include general practitioners (GPs), nurse practitioners, practice nurses, psychologists, podiatrists, dietitians and health coach or community health educators. Some regional diabetes centres co-ordinate and deliver diabetes management for individuals. It is essential for health care services to find effective ways in which deal with the impending crisis of diabetes and long-term conditions (Kenealy et al., 2017; Saunders et al., 2019).

This review focused on diabetes service delivery through primary and community-based services for Pacific communities (Ministry of Health, 2015c, 2016a). PHOs are funded by the DHB to deliver diabetes programmes for their enrolled population. Diabetes management programmes emphasise coordinated, comprehensive care along the continuum of disease across health care delivery approaches that are closely linked to community groups, with priority given to Māori and Pacific people (Ministry of Health, 2016a). However, the persistent and significant poor diabetes and health outcomes for Pacific peoples highlights gaps in service delivery for Pacific communities in New Zealand.

The Ministry of Health launched a programme in 2000 to monitor and improve care and outcomes for people with diabetes (Health Funding Authority, 2000). Patients were provided with a free annual consultation for their diabetes, and demographic and clinical data about the patients and their diabetes were collected. This study demonstrated that a structured and systematic general practice review process aimed at improving diabetes care and patient outcomes was associated with significant improvements in the health status of both T1DM and T2DM patients in the first three years. However, the study recognised that the effectiveness of interventions to improve chronic disease management should be judged by improvements in patient health over several years. I agree with the author in that the effectiveness of interventions to improve health outcomes should include social functioning and other health indicators of quality of life. In addition, the fundamental focus of this study was on individual patient care which is different from a Pacific holistic, family-based, and collective approach. The national diabetes guidelines advocate for individuals with diabetes to receive structured education that is tailored to meet individual and cultural needs,

including personalised guidance on nutrition and physical activity (Ministry of Health, 2014).

Diabetes Care Improvement Package (DCIP)

Another diabetes programme developed was Diabetes Care Improvement Package (DCIP). It is a community and primary care-based programme funded by DHBs to deliver core diabetes services (Ministry of Health, 2014, 2016a). DCIP programmes were different across District Health Boards (DHB) depending on the needs in the area and how diabetes services were delivered. For example, some delivered diabetes through innovative nurse-led services such as practice clinics, patient group education or community outreach clinics. Most research to date reported that primary care funders, planners and providers have been focusing on a traditional Western medical approach for diabetes management. It has focused on tailoring the medical management model with mixed results for Māori and Pacific peoples. It is about doctor- and nurse-led prevention, screening and diagnosis, education and starting medication management including initiating insulin therapy. There were few proven effective interventions in the community for managing poorly controlled T2DM (Pacific Perspectives, 2015).

Wilmot and Idris (2014) reported, T2DM was once considered a disease of older adults although the age of diagnosis is getting younger (< 40 years old) (Huang et al., 2019). In New Zealand, Pacific peoples are diagnosed with diabetes at a younger age compared to other ethnic groups (Coppell et al., 2013; Health Quality and Safety Commission New Zealand, 2018).

Diabetes self-management education and support (DSMES) is a critical element of care for all people with diabetes. Diabetes self-management education and support is the ongoing process of facilitating the knowledge, skills, and ability necessary for diabetes self-care as well as activities that assist a person in implementing and sustaining the behaviors needed to manage his or her condition on an ongoing basis, beyond or outside of formal self-management training. In previous National Standards for Diabetes Self-Management Education and Support (Standards), DSMS and DSME were defined separately, but these Standards aim to reflect the value of ongoing support and multiple services.

Diabetes Self-Management Education (DSME) Programme

People with T2DM and long-term (chronic) conditions or non-communicable diseases (NCD) are required to engage in self-management. DSME education and support is the on-going process of facilitating the knowledge, skills and ability necessary for diabetes self-management (Beck et al., 2020). Self-management programme aim to empower people with T2DM to take a leading role in self-managing their diabetes and be able to cope with the growing burden of long-term conditions (Ministry of Health, 2016c). Self-management is the cornerstone of diabetes management and understood as the overall process of an individual's engagement in their management of one or more chronic diseases (Beck et al., 2020; Lorig & Holman, 2003). People with T2DM require to have sufficient knowledge to manage their conditions (Gamble et al., 2017). Literature evidence suggested that DSME programme were effective vehicle for fostering self-management in individuals with T2DM and suggested that people who have appropriate knowledge, skills, and confidence to manage their health effective, are more likely to have better clinical and psychosocial outcomes. (Gamble et al., 2017; Hibbard & Greene, 2013). Care becomes more complex when the patient has two or more morbid conditions including diabetes problems or complications. The overarching health care priorities for good self-management include providing care that is patient-centred, culturally responsive, incorporates psychological support and includes systematic follow-up (Ministry of Health, 2016a). However, none of the internationally recognised DSME education programme have been developed for or critically appraised in the New Zealand setting (Keating & Jaine, 2016; McElfish et al., 2015; Miller, 2016).

Mohamad et al. (2015) systematically reviewed studies that explored the role of knowledge in diabetes self-management for the Asian regions. The authors uncovered the critical need to include cultural knowledge on diabetes management instead of scientific heath knowledge. They found that measuring cultural knowledge of diabetes helps researchers understand holistically about patients' interpretation of their illness and choices of diabetes management. Therefore, when dealing with diabetes, knowledge serves as a vital tool to empower patients, increase self-efficacy and instil self-confidence to make decisions. The authors concluded that by measuring people's cultural knowledge on diabetes accurately, researchers can learn how to improve treatment and increase health literacy in general throughout Asia. This study highlights

the importance of including cultural knowledge for diabetes self-management, which is vital for Tongan people experiences of living with T2DM.

Gamble et al. (2017) developed and piloted a structured DSME programme specific to the cultural and ethnic population of New Zealanders with T2DM. They included the diverse ethnic mix and high prevalence of obesity and diabetes in Māori and Pacific communities and historical dietary preferences. The DSME programme was piloted with 71 participants, which included 27 individuals with T2DM and practice nurses. This study found that DSME programme were an effective vehicle for providing individuals with T2DM the initial information and support to start self-managing their diabetes. However, to ensure DSME programs help individuals with the highest rates of diabetes and diabetes-related complications, it was important for end-users to participate in the development of the program. They recommended that DSME programme required longitudinal trial to determine if in the New Zealand context was able generate the same improvements in both clinical and qualitative outcomes as seen in similar international programs

The demands of food and dietary management, taking diabetes treatments like oral hypoglycaemic agent (OHA) and/or insulin injections and testing blood glucose (self-monitoring) once or several times a day; these are some of the tasks that a person with T2DM needs to self-manage with the support of service provider, family and friends. Budge et al. (2021) explored how European and Pacific people in New Zealand self-managed their long-term conditions. Thirty-two participants were interviewed about how they managed their condition/s at home with support from family, neighbours, agencies, General Practitioners (GPs) and nurses. They found that people with long-term conditions struggled with the acceptance of the diagnosis and struggled with their need to maintain independence and personal control. They self-managed every day, learning to plan, choosing what and what not to do, and negotiated with others to get tasks done and maintain quality of life. They managed better with support from understanding health practitioners, especially advanced nurses, with whom they have established relationships. However, there is a significant gap in knowledge on the extent to which Tongan with T2DM adopted self-management and maintain self-care behaviour, particularly with regard to food practices within family, church and community context.

Culturally safe practice

The New Zealand diabetes service providers are mainly non-Pacific practitioners (Ape-Esera et al., 2009). It is most likely that services provided to Pacific peoples will be delivered by non-Pacific practitioners for some time into the future. Within that context, it is essential to develop the cultural competence of non-Pacific clinicians to ensure the delivery of culturally safe practice. A fundamental strategy for enhancing the cultural competence of practitioners is to build cross-cultural understandings of diabetes services (Dauvrin & Lorant, 2014). Developing culturally safe practice upholds fundamental cultural and human rights for Pacific peoples (Akbar, 2018). Culturally safe practice also requires understandings of the impacts of Pacific interpretations of health and wellbeing within the socio-economic and historical context of Pacific peoples. In the context of the present study, to ensure such practices are culturally responsive, they must be guided by Tongan conceptualisations of diabetes and illness beliefs. Culturally safe clinical practice at the community also requires understanding and honouring the unique contribution of culturally specific understandings of diabetes and health.

Diabetes and dietary services

Diabetes dietary services have been influenced by socio-political and cultural complexity in health care systems (Ministry of Health, 2015c). This includes increased numbers of diverse ethnic groups, ageing populations with co-morbidities as well as the availability of fast foods, processed food, food outlets, and food ordering on-line. These changes have required a fundamental shift in the philosophical understanding of the discipline of nutrition and dietary services. Nutrition and dietary services are about behaviour changes, with a supportive environment (Beckingsale et al., 2016; Cassel & Boushey, 2015). Family and community support is essential for sustainable lifestyle changes to achieve better diabetes care and wellbeing among Pacific people (De Pue et al., 2010; Fukofuka, 2018). There is no direct evidence of the effectiveness of dietary services, diabetes guidelines and interventions with Pacific people. This is a significant gap in our current knowledge of food practices and diabetes management for Tongans with T2DM in New Zealand. Although Pacific people are one of the health priorities for ethnic populations, diabetes programmes may need further adaptation to meet the needs of Pacific people, with diabetes service providers learning from other services for Pacific

peoples (McCabe et al., 2013; McRobie & Agee, 2017; Pack, 2018; Wright & Hornblow, 2008). Therefore, a detailed review and analysis of the diabetes guidelines, policies and programmes for Pacific people will identify culturally tailored approaches to improve health outcomes for Pacific people with diabetes.

The primary health-based diabetes dietary services aim to improve access for Pacific and Māori people (Ministry of Health, 2015c). However, universal coverage is available for people with poor diabetes control regardless of ethnicity and socio-economic status. The majority of patients seen in my practice are Pacific people who present with co-morbidities such as obesity and diabetes complications (ProCare Health Ltd, 2015). Pacific patients also present with socio-economic issues like poor and overcrowded housing, no transportation, low paid jobs and extended working hours, unemployment and dependence on the government income support system (Pacific Perspectives, 2015). Therefore, a holistic approach is required because addressing health issues alone will not improve the health of Pacific people (Merriman & Wilcox, 2018). In addition, a review of the utilisation of primary health care services for Pacific people has reported that Pacific people experience financial, cultural, physical and linguistic barriers to the access to and use of services across health sectors (Pacific Perspectives, 2015).

Although dietary services are free of charge for patients, the DHB diabetes programmes allow for a limited number of sessions with a dietitian (one-to-one consultations) per year. This is a professional challenge as, in my practice experience, nutrition and dietary interventions for lifestyle changes cannot achieved in three sessions. Improved health services for Pacific populations take time to build and relationships take time to establish (Brown et al., 2005; Su'a, 2017; Tu'itahi, 2005). It also requires intensive education and a holistic health approach, which includes a concern for the whole family, community participation and attention to socio-economic issues that affect food choices and practices (Moata'ane et al., 1996; Toafa et al., 1999).

Diabetes dietary guidelines and physical activities programmes have been developed nationally and locally to improve diabetes care in the community (Coppell, 2013; Orr-Walker, July 2016). Even with this change in focus, the service does not go far enough to deliver the services that Pacific people need (Ellison et al., 2005; Ministry of Health, 2015a; Robinson et al., 2006; Wong Soon, 2016).

Leadership is required to promote and provide appropriate diabetes dietary services for the Pacific community, such as the faith-based programmes like Lotumo'ui in the CMDHB region (Counties Manukau District Health Board, 2010) and Enuaola in the Waitemata DHB region (Ministry of Health, 2018). A number of successful health initiatives, including the promotion of healthy eating, are built on the strength of Pacific communities and church initiatives which is a far more culturally effective way to work with Pacific people on change (Pacific Perspectives, 2011).

Access to diabetes dietary services

The previous section highlighted the free but limited number of consultations offered for diabetes services. Despite these free nutrition and dietary services, utilisation remains an issue for many Pacific people. Financial barriers such as the cost of transport, healthy food, time off work and the cost of childcare have been raised by diabetes patients (Southwick et al., 2012). In addition, low health literacy, diabetes complications, and culturally sensitive cases require more than the three funded dietary sessions currently allocated for people with diabetes (ProCare Health Ltd, 2015). There is a need for more dietary education sessions, at least five sessions, plus a holistic approach to meet the health and dietary management needs of Tongan and Pacific people with T2DM (Counties Manukau District Health Board, 2016; Southwick et al., 2012).

As recommended in the publication *Living well with diabetes* (Ministry of Health, 2015c), services need to be developed and adapted to target groups' needs. Pacific diabetes patients need longer appointment times to allow for health and nutrition literacy, intensive, support and the involvement of family members and community within a holistic approach. These are not currently prioritised in the diabetes services offered to Pacific people with diabetes. In addition, utilising technology and social networks will increase accessibility for diabetes dietary services. For example, I provide nutrition and dietary education through telehealth during patients' work meal breaks. This has improved patient concordance and takes the pressure off having to take time off work to attend a dietitian clinic. Furthermore, the services differ across DHBs so that there are inequities that do not take into account the specific needs of the populations served by the DHB and the PHO that funding is allocated to. For example, the Counties Manukau District Health Board (CMDHB), which has the largest numbers of Pacific people in the

world living in their catchment, funds fewer PHO services for people with diabetes and obesity than WDHB, which has a much lower proportion of Pacific people living in its catchment. In order to be effective, the health services should match the Pacific population health needs, not the other way around.

Local and national government priorities and decision-making influence policies on the cost of food, and local councils control the number of local takeaway and alcohol outlets, and the food in schools and environments where Pacific people reside. Peoples' dietary patterns are directly responsive to their local food environments, social eating patterns and the costs of food (Charlton et al., 2016; Coppell, 2013; Day & Pearce, 2011). For Pacific people, it is important to consider the meaning of food and the concept of sharing special food as a demonstration of love and respect. It is not sufficient for health care services to offer dietary advice and promote a change in eating habits without considering the socio-cultural context, the costs of foods and the food environments of communities. In low socio-economic areas, instead of fresh food markets there are more takeaway food outlets, and dairies that offer geographically accessible, but nutrient-poor food that is not consistent with the dietary advice and guidelines given to people with diabetes.

Diabetes and health policy

This section addresses how and why policy influences health services for Pacific people with diabetes and obesity related illnesses. As identified in the "Diabetes services in New Zealand" section above, there are gaps, challenges, and services that need changing to provide culturally appropriate diabetes programmes for Pacific people. In this section, I explain how my research will influence changes in my area of practice, in providing nutrition and dietary services to improve the health and wellbeing of Pacific people.

Good health policy and frameworks offer real opportunities for improvements in the quality of diabetes care and reducing inequalities in health and social outcomes (Gauld, 2016; Ministry of Health, 2014). It is fundamentally important to view and understand health from a Pacific cultural perspective in order to understand how to develop, deliver and evaluate appropriate health programmes for Pacific peoples (Boyle et al., 2016; Hallgren et al., 2015; Smith et al., 2016; Tukuitonga & Finau, 1997) . The Pacific worldview is holistic and encompasses balance, the harmony of physical, mental,

spiritual health, and the health of families and communities (Agee, 2013; Cassel & Boushey, 2015; Finau & Finau, 2003; Moata'ane et al., 1996; Thomlinson et al., 2004; Tu'itahi, 2005). The Fonofale health model provides a framework that illustrates common and important concepts that guide services for Pacific peoples in New Zealand. It characterises the elements of culture, family, physical, spiritual, mental, and other elements such as the environment. The concept of wellness can only be complete when all these elements are in balance (Pulotu-Endemann, 2001).

In addition, the health promotion framework enshrined in The Ottawa Charter is an important vehicle for reorienting health services, creating a supportive environment, sustaining social change, strengthening community participation in health initiatives, and developing personal skills. This is a Western-developed model but one that shows some alignment with Pacific health models (Ofanoa & Raeburn, 2014; Tu'itahi, 2005; Vaka, 2016). There is potential to work within the system to align with both the Ottawa Charter and Pacific health models within a community-based framework.

Research questions

In the research reported in this thesis, I was interested in listening to participants' stories of their experiences of living with T2DM and of the diabetes services the encounter. From my pre-understanding, I would support two main changes. Firstly, a change from a medical model treatment approach to a community-family focused health promotion approach to prevent those at risk of getting diabetes and to intervene with family members who are obese and/or diagnosed with diabetes (Southwick et al., 2012). Tongan community engagement is imperative in recognising what is required in terms of health promotion services for Tongan communities.

Secondly, I would advocate for an increase in funding and health policy for Pacific people, considering the complexity of Pacific family structure and the low socio-economic status of Pacific people. I want to hear participants' stories and identify the factors that affect the making of healthy food choices that are convenient, affordable, and culturally appropriate for Pacific people. What are the appropriate policies needed for this to happen? Government priorities and decision making are underpinned by the health policy of the day (Ministry of Health, 2016a). Policy makers need answers to the

questions above, from the Tongan community, to establish relevant and actionable polices.

Based on the rationales given above, my research proposed to answer the following research questions:

i. What is the meaning of being Tongan with T2DM in New Zealand?

ii. What are the factors that determine the food practices of Tongan people with T2DM in New Zealand?

iii. What can we do to help Tongan people with T2DM better manage their diabetes?

iv. What strategies can help improve food practices and diabetes management of Tongan people with T2DM in New Zealand?

Chapter 3 Research Framework

‘Ekisoto 35:35 “Ko kinaua kuo ne fakapoto‘i hona loto ke fai ‘a e ngaahi ngāue ‘o e tufunga tongitongi, mo e lālanga me‘a pulepule, mo e tuitui poto … mo e ngāue ‘a e lalanga: ‘io, ‘a e ngāue ‘a e faiva kātoa, mo e fakakaukau me‘a faingata‘a.”

Exodus 35:35 “He has filled them with skill to do all kinds of work as engravers, designers, embroiderers … and weavers—all of them skilled workers and designers.”

Introduction

The purpose of this chapter is to outline the theoretical approach that informs the structure, design, and methodology of this study. Methodology refers to the philosophical or theoretical framework that guides research and the assumptions that underpin that framework (Hammersley, 2018). It is important to use a research framework that is culturally appropriate for Pacific peoples when conducting research that involves Pacific peoples (Health Research Council of New Zealand, 2014; McGrath & Ka'ili, 2010; Smith, 1999). Pacific researchers and philosophers have developed Pacific research frameworks that represent the Pacific cultural worldview (Anae, 2019; Burnett, 2012; Vaioleti, 2006). In New Zealand, there have been guidelines developed for conducting Pacific research, especially in the areas of health and education (Arini et al., 2010; Health Research Council of New Zealand, 2014; Hudson et al., 2016; Massey University, 2017). All these frameworks and guidelines, along with the researcher’s Tongan heritage and experience of working closely with Tongan people with T2DM, have guided the theoretical approaches and the way they have been combined, and used in this study.

The aim of this study is to explore the meaning of food and its related practices through listening to the stories of Tongans with T2DM. A qualitative enquiry is best suited for the purpose of this research. Qualitative research strives to understand the meaning people have constructed of their world and their experiences (Maxwell, 2012; Merriam & Tisdell, 2015; Smythe, 2011). It captures the ‘what’ and ‘why’ of the story, in ways that quantitative research cannot (Ezzy, 2002; Merriam & Tisdell, 2015; Smythe, 2012; Yates & Leggert, 2016).

This chapter discusses the methodological approach and theoretical frameworks in five sections. The first section discusses how this study was positioned with a qualitative research methodology. The second section discusses the Pacific research framework and its relevance to the context of my research methodology. The third section describes the concept of talanoa and its position as the appropriate Pacific research methodology and methods that informed this study. The fourth section describes how this study was also informed by hermeneutic phenomenology, an interpretive paradigm. Since talanoa does not prescribe a way of analysing and interpreting the data, in the research design the importance of combining with this western research framework was recognised. The combination of Pacific and Western research frameworks acknowledged the importance of both Tongan and western cultures in the lives of Tongan people with diabetes in New Zealand. The last section explain the role of the Expert Advisory Group that included Tongan community leaders with cultural, spiritual, diabetes and public health knowledge and experience. They guided me on my research framework, translation and interpretation of the findings.

The following section discusses how this study was positioned within the qualitative research paradigm.

Qualitative research methodology

The nature of this study makes qualitative research the requisite approach. Qualitative research is an umbrella concept covering multiple forms of inquiry that help us understand the meaning people have constructed of their world and experiences (Boeije, 2010; Maxwell, 2020; Meredith et al., 2012; Merriam, 2002; Yates & Leggert, 2016) . Qualitative research was defined by Denzin and Lincoln (1994) as follows:

> Qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural setttings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (p. 2)

The phenomena in this study were Tongan people with T2DM. The qualitative research in this context has sought to interpret their world, the meaning of being Tongan, being diabetic, the meaning of food practices and their lived experiences. The key to

understanding is based on the idea that meanings are socially constructed by individuals while interacting with their different worlds (Maxwell, 2020; Merriam, 2002) .

Qualitative research is recommended for addressing questions about what occurred or how something occurred and to examine participants' perspectives on, and interpretations of, the subject matter in depth. It is able to reveal often disparate 'realities' that individuals construct within their own social worlds as they present 'inside out' perspectives of their world, and the phenomena being explored (Denzin & Lincoln, 2011; Maxwell, 2020; Muganga, 2015). Qualitative research is a powerful tool for learning more about our lives and the socio-cultural context in which we live. The purpose of qualitative research is to understand how people make sense of the world that they live in. As Patton (1990) explained,

> Qualitative research is an effort to understand the situation in the uniqueness as part of a particular context and the interactions there. This understanding is an end in itself, so that it is not attempting to predict what may happen in the future necessarily, but to understand the nature of that setting – what it means for participants to be in that setting, what their lives are like, what's going on for them, what their meanings are, what the world looks like in that particular setting (p. 1)

Qualitative researchers enter the situation and space of the participants and write about their stories, perceptions, behaviour, and feelings about the topic under investigation (Cohen & Manion, 2007; Denzin & Lincoln, 2011; Merriam & Tisdell, 2015). The description of the process, context, and interpretation of the stories that make life meaningful are at the heart of good qualitative research (Ezzy, 2002; Maxwell, 2020) . As Maxwell (2020) stated, "the strengths of qualitative research are that it addresses three key issues that matter: the meaning, context and process for developing public policies and programmes" (p. 181). Many scholars agree that high-quality research should be firmly grounded in a research framework, employ congruent methods for data collection and analysis, and should clearly demonstrate trustworthiness in all stages (Denzin & Lincoln, 1994 ; Glaser & Strauss, 2017; Holmlund et al., 2020). The use of a qualitative research framework must also follow ethical procedures that do not harm the community or individual participants (Anderson, 2017; Health Research Council of New Zealand, 2014; Maxwell, 2020) .

In this study, the participants are free to share their stories and perceptions, their feelings and what is important to them in looking after their diabetes. The flexibility of qualitative research facilitates the inclusion of the cultural beliefs and practices of participants.

The next section discusses the history of Pacific research methodology and what underpins this qualitative research.

Pacific research methodology

Pacific research methodologies were developed as culturally appropriate research frameworks that guide Pacific and non-Pacific researchers for research involving Pacific people, families and communities (Anae, 2019; Havea et al., 2020). Smith (1999) promoted the use of indigenous research frameworks instead of the dominant traditional western paradigms of research in Māori and Pacific communities. She recommended research frameworks and guidelines that have a more critical understanding of the underlying assumptions, motivations and values that inform research practices. Pacific research methodologies reflect the worldviews of Pacific participants, which are underpinned by Pacific values, beliefs and cultural principles (Anae, 2019; Fairbairn-Dunlop et al., 2014; Katavake-McGrath, 2015; Ketu'u, 2014; Suaalii-Sauni & Fulu-Aiolupotea, 2014; Tamasese et al., 2010; Vaka et al., 2016). In New Zealand, 'Pacific peoples' refer to those from Pacific Island nations who have made New Zealand their home (Health Research Council of New Zealand, 2014; Statistics New Zealand, 2018). Anae et al. (2001) have suggested that "if research is to make meaningful contributions to Pacific societies, then its primary purpose is to reclaim Pacific knowledge and values for Pacific peoples" (p. 8). Anae (2019) provide a summary of numerous Pacific research frameworks and methodology developed by Pacific scholars across the indigenous and diasporic Pacific.

It is important to acknowledge the Pacific research methodologies, frameworks and models that have emerged from the work of Pacific researchers. The wealth and diversity of models based on Pacfic ontology and epistemology has increased in recent years. These include but are not limited to the Fonofale Model (Pulotu-Endemann, 2001), Pacific models of mental health service delivery (Agnew et al., 2004), the Kalala Model (Thaman, 1997), the Vaka Model (Nelisi, 2004), the Fonua Model (Tu'itahi, 2007),

Teu le Va (Anae, 2016) , Talanoa Research Methodology (Halapua, 2000; Vaioleti, 2006), Talanoa Mālie (Manu'atu, 2003), Toungāue (Kalavite, 2010), Fa'afaletui Model (Tamasese et al., 2005), the Ula (Sauni, 2011), Makafetoli'aki (Ketu'u, 2014), Vaevae Manava ('Ahio, 2011), and the Uloa model (Vaka, 2016).

The primary role of Pacific research is to generate knowledge and understanding about and for Pacific peoples. It provides some insight into the complex relationship with the Pacific community, their living being and the meaning of their world (Anae, 2019; Helu-Thaman, 1992; Nabobo-Baba, 2008; Ponton, 2018; Sanga, 2004). It is important to appreciate that an outcome of Pacific research must benefit Pacific peoples, contribute to development of Pacific education and knowledge, and improve health, social and economic outcomes (Anae, 2019; Ministry of Health, 2020). Anae (2019) highlighted that much of the work on Pacific research methodologies and cultural competencies has occurred in the education and health sector.

In New Zealand, Pacific research guidelines were developed in the 2000s in responding to the need for research for the Pacific by the Pacific and non-Pacific researchers doing research on Pacific people (Anae et al., 2001; Health Research Council of New Zealand, 2014). Although Pacific culture is diverse, with multiple ethnic identities, Pacific research methodologies have similar philosophies and frameworks (Health Research Council of New Zealand, 2014; Massey University, 2017). They all work within a family-based (including extended family) worldview, offer a holistic approach and incorporate Pacific cultural principles, values and knowledge (Anae, 2019; Burnett, 2012; Pulotu-Endemann, 2001; Tu'itahi, 2005; Tualaulelei & McFall-McCaffery, 2019) .

These Pacific research frameworks that position themselves with Pacific values use methods that are most appropriate for Pacific peoples. It is purposeful and meaningful to use a Pacific research framework for this research study given that the participants are of Pacific descent and the focus is on Pacific peoples. There has been some research that involved a pan-Pacific approach, an ethnic-specific focus and/or was based specifically on gender, age, education, health or other social variables (Anae, 2019; Health Research Council of New Zealand, 2014; Tualaulelei & McFall-McCaffery, 2019) . This study has taken an ethnic-specific approach, with a focus on Tongan people.

A Tongan qualitative research methodology is relevant for this study. As a Tongan, being an inside researcher, I am culturally and spriritually connected with Tongan people. I am comfortable and familiar with talanoa. It is relevant to my dietitian profession as a health and nutrition advisor because talanoa creates openness with an informal conversation between myself, researchers and participants. I am fluent in Tongan, both spoken and written language. This study is informed by the Tongan way of interacting and communicating with each other – the Tongan concept of talanoa (Fa'avae et al., 2016; Vaioleti, 2006).

The next section discusses the concept of talanoa and its position as the research framework that informs this research.

Talanoa research methodology

Talanoa is one of the Pacific indigenous research methodologies and methods for, by and with Tongans ('Otunuku, 2011; Fakahau, 2020; Vaioleti, 2006; Vaka, 2014) . It is widely used by Pacific researchers and postgraduate students, especially in Pacific education (Anae, 2019; Burnett, 2012; Kalavite, 2010; Latu, 2009; Teisina, 2012), business and economics (Fakahau, 2020; Ketu'u, 2014; Prescott, 2009), health studies (Fehoko, 2020; Fuka-Lino, 2015; McGrath & Ka'ili, 2010; Vaka, 2014) and other research areas (Tu'inukuafe, 2019; Tupou, 2018).

The term ‘talanoa’ has been defined as open, infomal or formal conversation, talk, and sharing of ideas between people (Vaioleti, 2006). It creates a space for participants to tell and share their stories, their issues, their lived realities or related experiences. Talanoa is an effective research approach for Tongan and Pacific peoples (Akbar, 2017; Fehoko, 2020; Vaka, 2014).

Tunufa'i (2016), in his paper “Pacific Research: Rethinking the Talanoa Methodology”, criticised talanoa for the lack of philosophical rationale and logical research process which prevented it from being classified as a research methodology, as outlined by other Pacific research frameworks such as kakala and vanua. He argued that talanoa is best used as a research method rather than research methodology. I personally disagree with Tunufa’i’s argument. The talanoa framework underpinned by Pacific cultural values and beliefs is informed, first and foremost, from within the continuum of Pacific worldviews (Fa'avae et al., 2016; Health Research Council of New Zealand, 2014; Vaioleti, 2006,

2013; Vaka et al., 2020). Talanoa is ideal for this in-depth enquiry and reinforces the importance of using a conversational approach that allows each participant to fully tell their stories in their own way. It is embedded in oratory and verbal communication (Johansson-Fua, 2006). Talanoa is a traditional and conventional way of developing and revisiting knowledge within Pacific cultures, as everything was and is told (Fehoko, 2020; Havea et al., 2020; Manu'atu, 2003; Robinson & Robinson, 2005) .

I agree with Vaioleti (2013) that talanoa research methodology is the most prominent research methodology in the Pacific. Talanoa is a Pacific word that incorporates traditional forms of communication and has shared meaning within many Pacific groups (Akbar, 2017; Havea et al., 2020; Vaioleti, 2006). It is aligned with the phenomenological approach, and focuses on lived experience (Vaioleti, 2013). It creates an opportunity for both researchers and participants to listen and gain a deeper understanding of the nature of the lived experience (Akbar, 2017; Tecun et al., 2018). The meaning of lived experience and talanoa conversation can only be interpreted in the eyes of the participants. There is a Tongan saying *Ko e lea pea ‘a e a’u* which translates as A *talk or a word of an experienced person* (Ketu'u, 2014; Niumetolu, 2007). Tongan people’s common sense can be heard through talanoa, creating a safe space for participants to share. This is an advantage of this approach (Vaioleti, 2013). Therefore, the talanoa philosophical framework and logical research process allow it to be classified as a fundamental Pacific research methodology.

Talanoa aims to keep open discussion and sharing to explore the meanings, explanations, understanding of the experiences and behaviours of the participants (Fehoko, 2020; Ketu'u, 2014; Vaioleti, 2006; Vaka et al., 2016). It involves sharing ideas, skills, and experience through people telling their stories, sharing their past and their lived experiences with an inclusive, participatory and transparent dialogue (Farrelly & Nabobo-Baba, 2012; Fehoko, 2014; Fuka-Lino, 2015; Pole, 2014; Vaioleti, 2006) . Talanoa is a means of oral communication for Tongans, Samoans, Fijians and other Pacific ethnic groups in the Pacific, New Zealand, Australia and throughout the world (Farrelly & Nabobo-Baba, 2012; Halapua, 2000; Prescott, 2008; Vaioleti, 2006) . It is mostly carried out face to face (Vaioleti, 2006), but it can use other mediums of oral communication such as telephone, video conferencing and audio dialogue technologies such as Zoom™, Facetime™, Microsoft Teams™ and other social media.

I draw my discussion, analysis and synthesis of talanoa from a Tongan worldview and perspective. I purposely chose to use talanoa as the overarching research methodology and method for conducting this research. It provides a culturally appropriate way to dialogue and gather information from my research participants (Fa'avae et al., 2016; Fehoko, 2020; Havea et al., 2020; Kalavite, 2020; Vaka, 2014). Fa'avae et al. (2016) emphasised researchers' skills of cultural competency as key for successful talanoa.

Talanoa is a combination of two Tongan words, 'tala' and 'noa' (Churchward, 1959, p. 379) stated that 'tala' means to command, tell, relate, inform and announce while describing "noa" as meaning common, no value, without thought or without exertion. Thus, talanoa is used in multiple ways to obtain information, exchange ideas, share secrets, gossips, personal stories and testimonies. Similarly, Tongan academics have described 'tala' as to tell or to talk, and 'noa' means anything or nothing in particular ('Otunuku, 2011; Fehoko, 2014; Halapua, 2002; Vaioleti, 2006). Halapua further explained 'noa' as meaning "zero or without concealment" (Fonua, 2005). Mahina (2008) described 'noa' as the mathematical zero, or the point where the x and y axes meet. That is, 'noa' represents the point where agreement is usually achieved, and a sense of balance and harmony is established. In this study, talanoa refers to a conversation, and means to talk, to tell, to exchange and share ideas. It is carried out in an open and informal conversation ('Otunuku, 2011; Akbar, 2017; Kalavite, 2010; Vaioleti, 2006; Vaka, 2014) in which participants build trust, respect and relationships (Fakahau, 2020; Fehoko, 2020; McGrath & Ka'ili, 2010; Vaioleti, 2006). Talanoa fosters stability and inclusiveness in dialogue; participants can freely speak from their hearts in a situtation where there are no right or wrong answers. It is purely their own stories and the sharing of their personal experience (Halapua, 2007; Vaka et al., 2016).

Loto'i Tonga (Tongan heart), as explained by Ofanoa (2009), is an unique characteristic of Tongans. They have the passion, joy, spirit, and the mind set to achieve successful outcomes. Loto'i Tonga is the key cultural value that determines outcome. An individual heart can be opened to accept or closed to reject information. Therefore, diabetes education and training should aim to win the heart. With God's help, participants will most likely have loto lelei (good heart) and loto'i Tonga, to respect and accept with a happy heart (loto fiefia), passion and a spirit of joy, the impact of what they have been told, seen, and experienced for themselves.

I now discuss two aspects of ‘talanoa’ noted above in relation to this research framework, firstly when deconstructing talanoa into ‘tala’ and ‘noa’. As described in the Tongan dictionary (Churchward, 1959), ‘tala’ means command and annoucement, which is ‘talatu’utu’uni’ in Tongan. It is with authority. Thus, ‘tala’ is the annoucing or commanding of what needs to be done by subordinates. Tongan culture has rules, guidelines and customs that influence the way Tongan people live and behave in public (Crane, 1978). Talatu’utu’uni are used at public meetings, church gathering and family (including extended family) meetings. Talatu’utuni acknowledge the hierachies of social and cultural rank, genealogy, age and gender differences. For example, the church minister is the leader of church and when s/he makes an announcement, church members in due respect are obligated to do and follow the announcement or tu’utu’uni. Furthermore, the church minister is also regarded as “Talafekau”(Niumetolu, 2007). Tala (to tell) and fekau (message) mean that the church minister is God’s messenger. The church minister holds the respect and honour of his or her service to tell and preach God’s message to his people (Ketu'u, 2014). Furthermore, in family gatherings, the wish of the father, as head of the family, could be a command for the family (Crane, 1978).

Tongan culture and ways of being are based on kinship structures and social hierarchy (Crane, 1978; Kalavite, 2010; Ketu'u, 2014). In health situations, patients seek help from the medical profession. A patient will ‘talatala’ (tell) the medical doctor about his or her need and complaint. Doctors are well respected and regarded as persons with the highest medical authority in the Tongan community (Leslie, 2005). In response, the doctor will ‘tala’ the patient what to do. Tala (tell, command) here is tell with authority, with medical knowledge, which is power. On the other hand, a dietitian, who is at a lower rank in the medical profession, does not have the same authority and respect in the Tongan community. Patients ‘talanoa’, talk, have a conversation, with a dietitian. Patients can freely talanoa once trust and a relationship of respect is established. The lives of Tongans are very much controlled by their positions in the social hierarchy as well as how Tongans are related to one another as professionals, relatives (famili or kainga), friends and community members (Kalavite, 2010; Ketu'u, 2014; Marcus, 1974) . This is reflected in the concept of relational vā that separates as well as connects those involved in research (Fa'avae et al., 2016; Havea et al., 2021; Mahina, 2017; Tu'itahi, 2005).

The second part of the word 'talanoa' that I would like to discuss is "noa". I support the view of Mahina (2008) regarding noa (zero) as the point where the x and y axes meet. Noa represents the point where agreement is usually achieved, and a sense of balance and harmony is established. Talanoa aims to facilitate inclusivity by making participants feel comfortable and able to contribute, which is achieved by the process of talanoa managing the barriers within the Tongan hierarchy. Power is diffused and people see each other less in their roles or positions of power and more as equals (Jensen et al., 2012; Ketu'u, 2014; Marcus, 1974). In this study, the researcher and participants aimed to meet at a position where there was zero hierarchy, everyone was the same with no power or status differences, and a sense of belonging was established. It was a position where participants felt free and safe to talk, to share and tell their stories based on trust and respect. Without this relationship established, the level of talanoa would be superficial (Manu'atu, 2000). Thus, as a Tongan, I could talanoa with Tongan community, and draw on the trust relationship that I already established from being connected with the koloa, wealth of lived experiences of Tongans with T2DM (Fa'avae et al., 2016; Vaka et al., 2016).

Furthermore, talanoa brings stories from the heart (loto). Halapua (2002), who used talanoa in reconciling political conflicts in the Pacific, discussed talanoa as face-to-face conversation and explained how the tala component expresses our understanding of the inner feeling and experience of who we are, what we want, and what we do as members of a shared community. Tohinoa is Tongan for diary. It is made up of two words tohi (book, write, written) and noa (matters) and it is based on the oral tradition of sharing what matters, the koloa (treasures) written (tohi) in the heart (loto). Talanoa opens space for participants to share, a heart-to-heart talk (talanoa) and minds (remembering) lived experiences kept in tohinoa. Diabetes dietary practice often requires people with T2DM to bring a food diary. Pacific people do not usually keep a food diary. Food intake is written (tohi) in their heart and mind (memory) and talanoa is an open dialogue where participants can share their personal food practices and diabetes management. The philosophy of talanoa, a Tongan oral form of communication, the unwritten etiquette that is verbally passed from one generation to the next (Vaioleti, 2006).

In this study, diabetes is a personal matter which is private to the individual and their family. Tukuloto'i is what is kept or stored in the heart and appurtenance of the heart signifies ownership (Kailahi, 2017). Diabetes could be tapu (sacred) and the person might rather keep it within himself or herself. Personal belief, idea and concept is appurtenant to the loto (heart) that is tukuloto'i (stored) unless willingly shared. People with diabetes may not want to expose or share with others, especially with those with whom they have no relation or connection. There is a need to make the situation noa (neutral), which requires one to establish a relationship in order for the participant to open their heart (loto) to share, to tell their lived experiences. There first needs to be a cultural, spiritual or social connection that enables access to the heart (loto) to open up and talk about tapu (sacred) things.

Loto mo e 'atamai, Ko ho pule'anga ia;
Fokotu'u taloni ai, Tala ai ho fatongia

(Heart and mind, Is your Kingdom,
Establish thy throne, Tell (announce) thy duties)

Free Weslyan Church of Tonga Hymn 510 vs 5

Talanoa usually only occurs with those with whom one is connected by ethnic group, family and relatives, social level, and those from the same cultural background (Akbar, 2017; Manu'atu, 2003; Vaioleti, 2013). In this space, the participants interact with reference to their own realities, guided by their inspirations and rules, and in a familiar cultural environment (Fa'avae et al., 2016; Fehoko, 2020; Halapua, 2007; Havea et al., 2020; Johansson Fua, 2014; Mahina, 2008; Manu'atu, 2003; Vaka et al., 2016).

The success of talanoa is dependent on how accurately a researcher can recognise participants' actions and non-actions, what is said and unsaid in combination with how they are said or are not said, and then affirming and interpreting those actions and words through the cultural ways of the participant (Vaioleti, 2013; Vaka et al., 2016). The essence of knowing and being is captured in the talanoa research framework. The cultural synthesis, interpretation, writing, and re-writing of lived stories, and checking and confirming with participants, has produced knowledge and understanding of ways of being Tongan people with T2DM.

When Suaalii-Sauni and Fulu-Aiolupotea (2014) reviewed two Pacific research methodologies, the talanoa and faafaletui, they found that "Pacific people benefit most,

in our experience, when there is a deliberate and mutual sharing and probing of Pacific and Western epistemologies inherent in contemporary Pacific research" (p. 332). Talanoa aligns with aspects of the phenomenological research methodology (Vaioleti, 2013). It creates spaces for Tongan T2DM participants to describe their experiences through storytelling.

The following sections show the interconnectedness between the philosophy of a Western research framework, hermeneutic phenomenology, and talanoa. In this, I explain why I have chosen to integrate hermeneutic phenomenology with talanoa, to capture the meaning of food and its related practices for Tongan people with T2DM.

Hermeneutic phenomenological research framework

This section discusses how this study is also informed by Heideggerian hermeneutic phenomenology. Heidegger focused on people's experiences of "being-in-the-world" (Capobianco, 2014; Cohen & Omery, 1994). Hermeneutics is a research method founded on the ontological view that lived experience is an interpretive process (Adams & van Manen, 2017; Kisiel, 2002; Racher & Robinson, 2003). Heidegger was not interested in the "structure of phenomena but how the phenomena are interpreted" (Cohen et al., 2000, p. 5). The choice of hermeneutic phenomonology and talanoa for my study was influenced by my background as a Tongan (Pacific) dietitian. I am concerned about the lived body, lived space, lived time and living with others in a communal way. A Tongan person's sense of self is defined through engagement with families, church, community and their environment (Havea, 2012; Havea et al., 2021; Helu-Thaman, 2008; Ketu'u, 2014; Tu'itahi, 2007). Furthermore, since talanoa does not prescribe a way of analysing and interpreting the data, combining it with a phenomenological approach, a Western research framework, provides guidance and on how to analyse and intepret the talanoa data.

I start this section with a brief history of the phenomenology of Husserl, and then discuss hermeneutic phenomenology through Heidegger and Gadamer. Then I look at applying their philosophical approaches to investigating and capturing the lived world of Tongan people with diabetes.

Phenomenology is the study of lived experience, with an emphasis on the world as lived by a person (Patton, 2002; Smith, 2007; van Manen, 1997). Edmund Husserl, an early

founder of phenomenology, argued that focusing on the person's ways of being-in-the-world uncovers experiences and reflections which may have not been intended, or realised. The phenomenological approach thus provides opportunities for deeper investigation. Phenomenology creates an opportunity for both researchers and participants to listen and gain a deeper understanding of the nature of the lived experiences (Sokolowski, 2000; van Manen, 1990, 2016) . The phenomenological approach focuses on the lived experience (Smith, 1999). That means, in this research, that I asked questions or made requests such as: "Tell me about the last time you went to a feast. What did you eat? Did you break any of your food and nutrition rules? What made it hard to avoid eating that food?", "Tell me about that meal you had when you visited family", or "Tell me about your blood sugar." Such questions aim for detailed stories about specific experiences.

Hermeneutics is more specifically focused on explicating meaning (Heidegger, 2008; Smythe, 2011; van Manen, 2014). Questions such as those listed above may have drawn participants away from talking about a specific experience to contemplate the meaning behind the experience. For example, a hermeneutic question within my study might be "Tell me about the meaning of announcing a feast" or "Tell me what it is like living with diabetes at your church." Hermeneutics recognises that meaning is culturally and historically rooted (Gadamer, 1975/2013). Participants may well remember the meaning of feasts back in Tonga, and how such customs are preserved in New Zealand.

I was drawn to Heideggerian hermeneutic phenomenology as it looks for the meaning behind an action or idea (Adams & van Manen, 2017; Chang, 2010; Koch, 1999; Laverty, 2003). This approach encourages reflection on being part of this world, with a holistic view of the past, present and future. Heidegger claimed that nothing can be encountered without reference to a person's background. The researchers also bring their own interpretive lens to the thinking and writing (Smythe et al., 2008; van Manen, 1990).

My cultural upbringing, education background, and being Tongan uncovers how I see and interpret the world. My pre-understanding is not something that I can put aside, as it is part of myself. Heidegger believed that understanding is not merely the way we know the world, but rather the way we are (Polkinghorne, 1983). This means that interpretation is critical in the process of understanding participants' lived experiences,

as we are constructed by the world while at the same time we are constructing this world from our own background and experiences (Munhall, 1989; van Manen, 1990).

This research was conducted in the interpretive paradigm where the central goal is:

> to seek to interpret the world, particularly the social world, (and where) knowledge … comprises constructions arising from the minds and bodies of knowing, conscious and feeling beings ... generated through a search for meaning, beliefs, and values, and through looking for wholes and relationships with other wholes (Higgs, 2001, p. 49).

It is important to try to distinguish between phenomenology and hermeneutics. Phenomenology describes the lived experience (van Manen & Adams, 2010). It aims to reveal the meaning of the experience of the phenomenon under investigation (Smythe & Spence, 2012). Hermeneutic phenomenology is an approach that attempts to understand the hidden meanings together with how participants make sense of their experiences (Grbich, 2007). As van Manen (2014) stated, "much of phenomenology has hermeneutic (interpretive) elements – but not all hermeneutics is phenomenology" (p. 26). Nevertheless, he recognised that it is often difficult to make a clear distinction between the two. I have therefore, named my approach 'hermeneutic phenomenology', acknowledging the interpretive nature of this study that seeks meaning drawn from life and cultural experience.

In this research, the hermeneutic phenomenological approach seeks to find shared meanings of lived experiences, what determines food practices, and how tradition and cultural values influence food choices and diabetes management. Heidegger (1962) argued that we can never get to the essence itself for, just as we grasp insight, it withdraws. Nevertheless, the quest for the imaginative intuition is the interpretive challenge of this research. Gadamer (1994) drew particular attention to how we interpret meaning from our cultural and historical horizon. Thus, I have used insights from both Heidegger and Gadamer to help integrate my pre-understandings and experiences as an insider in this research.

One method of doing hermeneutic phenomenological research was described by van Manen (1990). He described the process of gathering and interpreting lived experiences simultaneously through six overlapping stages . This happens through a circular process of inquiry known as the hermeneutic circle.

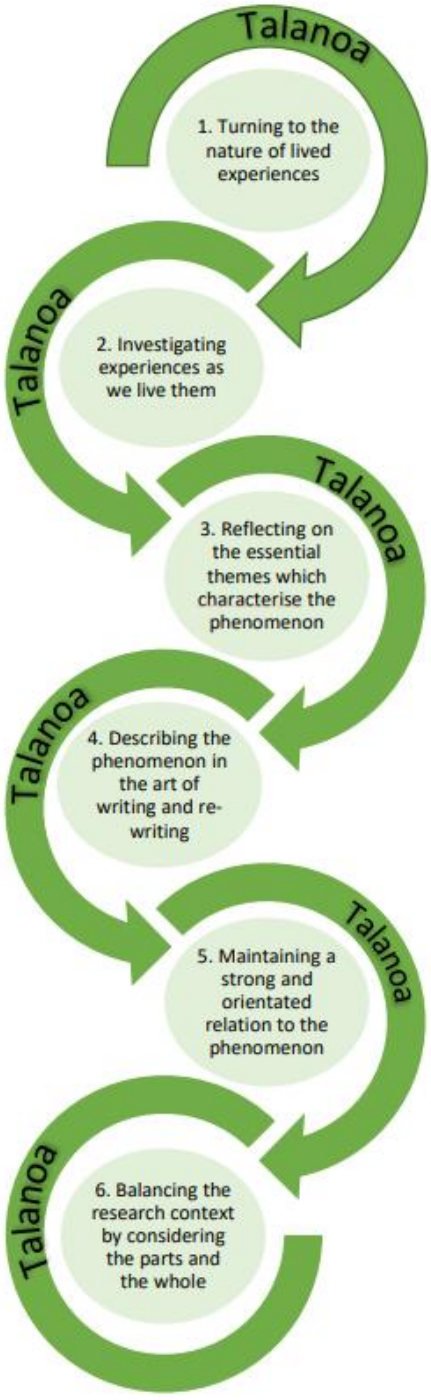
Hermeneutic circle

In my research, talanoa and van Manen's (1990) six research activities guided the analysis and interpretation of participants' stories as shown on Figure 1. The lived stories and their analysis were progressively developed into initial interpretations then themes through the process of talanoa and deeper understanding, by moving between the whole and parts, leading to new and diferent understandings (van Manen, 2014). The research findings were built from listening to the participant's voices, talanoa with the scripts, talanoa with self and integrates my own pre-understandings. Furthermore, hermeneutic phenomenology appreciates that all experience is interpreted through a cultural-historical lens, in this case, 'being Tongan' within the predominantly western society of New Zealand.

The details about how talanoa occurred in each step through hermeneutic cycle, the six research activities (van Manen, 1990) of gathering information, data analysis and interpretation are presented on chapter 4.

"Ko e tala pe 'oku fungani, huanoa ka sio ki ai."
("The best story I ever heard, let me see the reality of it.")
Free Weslyan of Tonga hymn 382: 1

Figure 1. Talanoa and six research methodological process, adapted from van Manen (1990, pp. 30-34) .



Expert Advisory Group

A diabetes expert and cultural advisory group inclusive of Tongan community leaders was established to offer me guidance through this research. It included Dr. Viliami Puloka, a Tongan medical practitioner with public health experience (including extensive experience in Pacific nutrition, food and diabetes), and Rev. Dr. Nasili Vaka'uta, Principal

of Trinity Methodist Theology College, who has research experience and interest in rethinking the way we read and interpret the Bible in our own contexts and cultures instead of drawing on western theologies and hermeneutics. Another member, Rev. Goll Fan Manukia, Superintendent, Lotofale'ia Mangere Tongan Methodist Parish, provided both theological and cultural support.

Throughout my study, I worked closely with other Tongan doctoral students who were interested in supporting each other. It was open for those who wanted to get involved. Dr. Viliami Puloka chaired the group and named it 'Ko 'ofa pe" (Only with Love). Love drew us together to talanoa, share our personal stories, our passion and struggles. The group met once a month and encouraged members to present and share sections of their writing. I found this group useful, especially with the methodology and methods chapter.

The advisory group built upon love and weaved with Tongan cultural core values of mo'ui fakatokolahi (collective), tauhi vā (maintaining relationships), mamahi'ime'a (reciprocity) and the need to help each other with faka'apa'apa (respect) and loto tō (honouring). Other members included Dr. Losa Moata'ane, who completed her study in 2018 and is now the Associate Dean (Pacific) in the University of Otago's Division of Sciences, Dr. Pauliasi Tony Fakahau, who completed his study in 2020, and PhD candidates Mrs Jeanne Pau'uvale-Teisina and Mrs Hone Litiuingi 'Ahio.

The advisory group has guided me, the researcher, on principles related to diabetes, the talanoa research framework, the method and the emerging findings. Rev Dr Nasili Vaka'uta and Rev Goll Fan Manukia shared their stories from a pastoral care aspect, and their guidance supported and validated the interpretation of findings, especially on Tongan culture and church acivities. I did not share the raw data with the group to protect participants confidentiality. Their expertise will also be drawn upon to help disseminate findings.

Summary

This chapter has explored the qualitative research framework that guides my study. Talanoa and hermeneutic phenomenology have been used with the aim of capturing the meaning of food and its related practices through listening to stories of Tongans with T2DM or those who live with a person with T2DM.

In the next chapter I explain how I undertook the study, describing the methods used to gain insight into the lived experiences of Tongans with T2DM.

Chapter 4 Methods

> *My interest lies in the interaction of experience and thought, in different voices and the dialogues to which they give rise, in the way we listen to ourselves and to others, in the stories we tell about our lives… that the way people talk about their lives is of significance, that the language they use and the connections they make reveal the world that they see and in which they act.*
>
> *(Gilligan, 1993, p. 2)*

Introduction

This research provided an opportunity for Tongan people who have T2DM to tell their stories and explore their experiences and the meaning of their practices related to food and diabetes. For me as a Tongan, and in working with Tongan participants, talanoa is the method that would stay true to the purpose of this research study and provide an opportunity to hear the voices of Tongans with T2DM. As a Tongan with good understanding of Tongan language, anga-fakatonga (way of living), customs and values, I wanted to inquire into the participants' stories. True engagement takes place when people are connected, have a sense of belonging, and feel safe to share personal experiences (Fuka-Lino, 2015; Vaka et al., 2016). Talanoa builds upon relationships which are based on a communal idea of working together and sharing (Tecun et al., 2018; Tupou, 2018; Vaioleti, 2011; Vaka, 2016).

Nevertheless, there are questions about 'what to do with the data' that are usefully informed by Western research approaches. This study is also informed by Heideggerian hermeneutic phenomenology. In order to ensure the internal consistency of this study, I conscientiously made sure that all aspects of this study were congruent with talanoa and hermeneutic phenomenology. Talanoa and the six research activities suggested by van Manen (1990) guided data analysis and interpretation. More details about how talanoa occurred in each step through a hermeneutic cycle of reading, writing, reflecting, interpretation, and rewriting are provided within the interpretation and data analysis sections later on this chapter.

Overall, this chapter describes the research process by systematically providing details of how this study was carried out, step by step.

Ethics approval

Ethics approval for this study was obtained from the Auckland University of Technology Ethics Committee (AUTEC) on November 28, 2018, for a period of three years (Appendix A: AUTEC approval letter). The approved terms of the study allowed me to recruit up to 20 Tongan people who have T2DM and family members who were involved in diabetes management and food practices. Participants in the research were volunteers and their privacy and anonymity were respected and maintained. Consent processes and protocols were designed to promote informed choices about participation as well as to ensure informed consent. The recruitment of participants and the actual research commenced once ethical approval was granted.

As a Tongan researching Tongan people, I was also aware of my own ethical and cultural responsibility toward the participants in terms of the establishment of rapport, respect, trust, and reciprocity within an approachable and friendly environment (Fa'avae et al., 2016). The Pacific health research ethics guidelines, and my own understanding of Tongan cultural values guided the research design and methods.

Promotion of the research project

During December 2018, I engaged with members of Tongan Church Leaders Council in Auckland. We arranged to attend some church services in the Auckland region and had talanoa with some church leaders and members about my research study. All Tongans are fully committed to and support education. They did not need any convincing to support a Tongan student's desire for higher education. A well-educated person has status in Tongan society. Education is measured in term of qualifications and 'Doctor' (Dr.) is at the top of education hierarchy. My desire for higher education, a Doctor of Health Science (DHSc) qualification, is to benefit all Tongans. The "Tangata poto" is an educated, wise, and knowledgeable person (Kavaliku, 2007; Teisina, 2012; Thaman, 1997).

In line with the Tongan value of reciprocity, this research acknowledges the core principles of sharing and supporting each other. Such a quest as my research is well supported within Tongan community. People made themselves available and were willing to participate in a research study by Tongans for Tongans ('Ahio, 2011; Fehoko,

2014; Vaka, 2014). I assumed that I would not have any problems with recruiting study participants because of my connection with Tongan church leaders and professionals. The challenge was finding out who had T2DM and was available to participate.

Participant information sheets both in English (Appendix B: Participant Information sheet (English) – Individual Talanoa), and Tongan (Appendix C: Participant Information sheet (Tongan) – Individual Talanoa) were left with members of the Tongan Church Leaders Council. These information sheets described the purpose of the research and included contact details for myself as the researcher, and my supervisor.

Selection of participants

The quest in qualitative research is to choose information-rich participants: "those from which one can learn a great deal about issues of central importance to the purpose of the inquiry" (Patton, 2002, p. 230). The choice of who to invite was based upon my experience and knowing those who are likely to make a difference for the Tongan community. I purposively chose people in leadership positions on the assumption that these were reflective people who are mindful of the importance of mo'ui lelei (good health) and wellbeing of the Tongan community. In order to minimise the risk of coercion, a careful and thoughtful process of participant recruitment included the following inclusion and exclusion criteria.

Inclusion criteria

The research started with five individual talanoa (one-on-one conversations). The rationale for selecting this number of participants was to provide sufficient data through the in-depth telling of stories of lived experience of the phenomenon of interest. As sole participants, each individual was invited and able to share his or her stories with close attention to detail, which enabled my interpretation of key themes related to being Tongan living with T2DM in Auckland.

Laverty (2003) emphasised that, in a hermeneutic phenomenological study, the participants selected are those who have the experience pertaining to the intentions of the study and that they ideally be different enough from one another to enable a rich array of unique stories of the phenomena to unfold. In this initial phase, I was looking

for Tongans who were willing to share their stories of what it is like to live with T2DM with perceptive insight. The inclusion criteria were people who:

- were of Tongan descent and still linked to Tongan community within New Zealand,
- had T2DM and are willing to share their stories in this study,
- could talanoa (converse) in Tongan language, and
- were over 18 years old and were available during the data collection period.

Further to this, I added people who:

- have a leadership role in church, community and/or professional organisations.

This research seeks to bring forward Tongan-specific recommendations for how Tongan people with T2DM can be better supported. To involve key influencers in this foundation stage of the study was the first step to winning their heart (loto) with interest and commitment. The participants talanoa - their stories capture the realities of a Tongan with T2DM and their experiences in relation to the family, church, and community involvement. Participants could also talanoa about their children, church members' involvement in family and church cooking/food preparation.

Exclusion criteria

In order to minimise the potential risks of coercion, the following exclusion criteria was used:

Tongan people with diabetes who were:

- under my dietary and diabetes services care,
- within my family or related to me, or
- less than 18 years old.

Since the Tongan community in Auckland is relatively small, recruitment was through my own network with the Tongan church and community. In discussion with my supervisors, and with advice from AUTEC, no conflict of interest was apparent.

Recruitment process

December and January are busy months for Tongan families and community. It is a season of school holidays, Christmas, and New Year festive seasons, and many church activities, family celebrations and commitments. After talanoa with church leaders, I agreed that it was best to start recruitment in mid-January 2019.

An intermediary person (IP) was appointed, signed a confidentiality agreement to promote and recruit participants in January 2019 and to ensure there was no sense of coercion. The IP engaged in talanoa with members of Tongan Church Leaders Council and compiled a list of potential participants as guided by the inclusion criteria. The IP confirmed participants who were interested and available to participate in this study. The participant information sheets both in English and Tongan language were left with church and community leaders who confirmed their desire to participate. Consent to participate was offered verbally to the IP with an agreement to be contacted by myself within a month. The IP explained and clarified the participation information sheets and the consent form (Appendix D: Consent Form – Individual Talanoa) to ensure that participants were well informed about the research study. The IP collected the participants' contact details for me to confirm participation in the study.

I followed up interested participants in the second week of January 2019 with a phone call. We talanoa (talked) about the research and my role in the study. The first five participants on the contact lists, all agreed to participate in this study. I was encouraged by the generosity of interest that came alive from the telephone talanoa (conversations). Even though the IP had explained the information sheet and consent form, I made sure that participants were clear and fully informed about the purpose, process, and details of this study. Generally, they did not think there is any potential risks of coercion in the Tongan community. Participation was voluntary and Tongans are supportive of education, and this together with Tongan cultural values of mamahi'ime'a (reciprocity), 'ofa (love), and faka'apa'apa (respect), meant they were willing to participate and preferred to deal directly with the researcher, myself. It was about tauhi

vā, maintaining relationship. The five participants also referred other church and community leaders, friends, families, and relatives whom they knew that they would be interested and willing to participate. The IP approached them for Phase 2, Group talanoa

Informed consent

Informed consent is very important to make sure that both researcher and participants have a good understanding of their relationship, what is involved and what is required of them in this study. The participants were re-assured that their participation in this research project was voluntary and that they had the right to withdraw from the study at any time up to confirmation of their talanoa transcripts. None of them withdrew from the study and they all expressed their full support and willingness to see me complete this worthwhile research for the benefit of our Tongan families and community.

A phrase commonly expressed by participants in the talanoa was:

> *"Fakamālō atu kiate koe Soana, ho'o lotolahi mo 'ofa hotau kakai, ke fai e ako ko 'eni, ke tokoni ki hotau kainga Tonga. 'Oku fu'u faka'ofa 'aupito e suka pea te tau mate pe he kai."*
>
> *"Thank you Soana for having the courage and love for our people to do this study, to help our Tongan families. We are deeply affected by diabetes and will die from the eating."*

Talanoa provided an opportunity for me, as the researcher, to clarify and explain, in Tongan, the details on the information sheet. An opportunity was provided to answer their questions and explain the details of the consent form.

Confidentiality and anonymity

It was important that confidentiality be maintained throughout this research project to respect and prevent harm to research participants. Maintaining confidentiality was essential during the recruitment process, since the Tongan community is relatively small and communal/collective compared to New Zealand population, and some of the participants could know each other.

During the talanoa session, the participants did not worry about revealing their identities. However, under the requirements of AUTEC ethics approval, all participants'

identities remain confidential. Therefore, pseudonyms have been used with common Tongan names used for each gender. Participants were asked to choose a preferred name. Only one participant chose her pseudonym, and the other participants were not concerned about the fictitious name and asked me to choose. Additionally, I explained how each transcript would be used to develop stories and how these would be returned to them. I also clarified how their stories may be used in the final thesis.

The following sections discuss the profiles of the five research participants. These general profiles offer information about the participants including gender, age at diagnosis, duration of being diabetic and type of leadership role each participant had.

Phase 1: Individual talanoa

Participant profiles

The five participants for phase 1, were highly respected leaders in the Tongan community. They consisted of three church ministers from different denominations and two health professionals who held senior positions in their church congregations in the Auckland region. It is important to protect the identity of the participants. Pseudonyms are used to represent each participant, using common gender-appropriate Tongan names. Age range is reported rather than specific age, in order to protect participants' identity. A summary of the participant profiles presented in Table 1.

Table 1. Participants of Individual Talanoa

Participants	Gender	Age range	Aged (yrs) Diagnosed	Years of experience	Leadership Role
Tupouta'anea	F	60 – 65	50	14	Church Minister
Kotoni	M	60 – 65	47	13	Church Minister
Taniela	M	65 – 70	58	10	Church Minister
Mele	F	60 – 64	48	16	Professional
Salome	F	50 – 55	42	13	Professional

The participants were three women and two men. They have lived with T2DM for ten years or longer. Three participants diagnosed with T2DM in their forties and two were diagnosed in their fifties.

The following sections present more detailed information on participant's types of diabetic treatment, family background and household details, including who prepares food at home. All participants had over five years' experience as leaders and worked closely with the Tongan community. They held leading positions where they have been leaders of people in church, community, health management and primary health services. The background information shows that these participants do not come to the study alone: they are part of a family and community.

Church Leaders

Tupouta'anea has been taking Oral Hypoglycaemic Agent (OHA), since being initially diagnosed with T2DM. OHA is known to participants as diabetes tablets and will use the terms exchangeable in this thesis. She does not want to take insulin. Tupouta'anea's husband also has T2DM and is taking diabetic tablets. He prepares their food at home. Their children have grown up and eat out most days or prepare their own food. In their household, Tupouta'anea lives with her husband, two daughters and one son in-law. Tupouta'anea was born in Tonga and had been in New Zealand for over 20 years. She does not have any first-degree family history of diabetes.

Kotoni is taking diabetic tablets and insulin. He started on OHA at diagnosis and insulin was added after five years of being diabetic. Kotoni was on the maximum dose of OHA, but his blood sugar level remained high. Kotoni did not want to make any food changes. His wife is also having T2DM and is taking diabetes tablets. At home, Kotoni prepares his own food most of the time, and his wife helps with their meals. Their children do not eat the Tongan staple foods and prefer to eat takeaways, dine out or cook their own food. In their household, Kotoni lives with his wife and three grown-up children. They always have Tongan food gifted and donated from kāinga (famili), extended family, kāinga lotu (church families) and community members. Kotoni was born in Tonga and migrated with parents and siblings 40 years ago. He has a strong family history of T2DM, as both parents and one sister had diabetes.

Taniela has been taking OHA, diabetes tablets since diagnosis. He knows that his blood sugar is not well controlled as the doctor has increased his OHA doses over the years. Taniela prepares his food at home and is very conscious of his food choices when he

attends Tongan feast. Taniela's wife does not have diabetes, is supportive and makes sure that a variety of vegetables and healthy food is available at home. In their household, Taniela lives with his wife. Their children live with their own families. They come to visit and stay with them for short periods. Taniela was born in Tonga and migrated to live in New Zealand 30 years ago. His parents did not have diabetes but many of his maternal family had this history. On his father's side of the family, there have not been many diabetics, but they have a history of heart disease.

Professional Leaders

Mele is a health professional and an active member of the Tongan community. She is attending a Tongan church but consider herself an inactive member. Mele started on OHA when she was diagnosed with T2DM. Her personal goal is to avoid taking insulin and having dialysis. She lives with her elderly mother and two other family members and close relatives. No one else in the household has diabetes. Family members prepare the family meal, but she does not eat with them regularly. Mele is well informed about diabetes and food, and struggles to control her food intake, especially when she is out with friends and colleagues. Mele was born in Tonga and has lived in New Zealand for 50 years. She does not have any family history of diabetes. None of her parents or siblings had or have diabetes.

Salome is a health professional and is an active member of the Tongan church. She could have been diabetic in her last pregnancy. Her daughter's birthweight was 11 lbs. Salome is currently taking diabetes tablets and has made many changes to her food intake. Her husband is the main cook for the family and likes Tongan staple foods. He does not have diabetes. Salome lives with her husband and two daughters. She is concerned about her daughter's poor eating habits, obesity, and risk of getting diabetes. Salome was born in Tonga and has lived in New Zealand for almost 40 years. She does not have any family history of diabetes. None of her parents or siblings had or have diabetes.

Gathering of stories - The talanoa

Talanoa seeks to create openness with informal conversation for participants to share their stories. In this study, I encouraged participants to reflect on their everyday life, their world of being Tongan, being diabetic, their experiences and perceptions about

diabetes services, diabetes management and treatment, and their food practices within their families, church, and community.

The individual talanoa were conducted between mid-January and the end of February 2019. They took place at the participant's home, workplace, or the researcher's home, as determined, and agreed by each participant. Each talanoa started and closed with Tongan protocol of lotu (a word of prayer) as they are important part of any Tongan gatherings (Kalavite, 2010; Vaka, 2014). Lotu provides engagement and strengthen the relationship between the researcher and the participant, providing a safe space for talanoa. It also acknowledges the Tongan spiritual cultural values and invite God to bless and guide the talanoa. With the church ministers' talanoa, each minister was invited to say the lotu, opening and closing prayer as a sign of faka'apa'apa, respect of their church and spiritual leadership role (Appendix E: Closing Prayer – Individual Talanoa). The two professional leaders requested that I said the opening and closing prayer as they respected and acknowledged my church role as a lay preacher.

At the beginning of each talanoa, I gave participants the consent form and information sheet to read just in case they had not had time to read the forms provided by the IP. All participants consented and were happy to sign the form before the talanoa session (Appendix D: Consent form - Individual Talanoa), building upon trust and Tongan values of tauhi vā, maitaining relationship, faka'apa'apa (respect) and mamahi'ime'a (reciprocity). All consent forms are stored in the locked cabinet in my supervisor's office. This was separate from any data obtained in the research.

The talanoa were held with the five participants to gain stories of their experience. The conversational style and prompts I used assisted me in my attempts to capture stories that were as accurate as possible. Even though I had an indicative questions guide (Appendix F: Indicative Questions Guide for Individual Talanoa) ready, I did not really use it as participants shared their stories openly, willingly and in great details. One story led to another story implies that culture is embodied in conceptualising the narrative and recognising significant cultural factors that emerge as a result of the interactions (Vaioleti, 2013).

Participants shared their stories through an in-depth talanoa that lasted between 60 and 90 minutes. It started with what the participants wished to talk about, such as church activities, family matters and some research and study in which they had participated in the past. This often took 10–15 minutes before we started to talk about the research topic. This is very important as it fakamāfana'i e loto (warm up the heart) for an open talanoa. Unlike Western interviews, talanoa built on share cultural values and maintain harmony within researcher and participants. The five participants were keen to tell their stories. Talanoa, conversation was personal as each participant shared their struggles and told stories of how diabetes influenced their personal life in a manner that is culturally informed, respectful, and appreciated.

Audio recordings

All talanoa were audio recorded with a voice recorder for the transcribing process, with recordings stored as digital files. Every participant was briefed on this method of recording and reminded that the recording was confidential. This was also included in the participant information sheet and the consent form. All participants accepted audio recordings.

The information gathered in the talanoa was in Tongan and English, taking into account each participant's choices and preferred language. All five participants were bilingual and switched between Tongan and English language throughout the talanoa session.

Transcribing

Each interview was transcribed verbatim. I chose to transcribe the first two talanoa as I wanted to get a feel for the data and stay immersed in it. However, it was agreed with my supervisors that although it allowed me to fully immerse myself and gain a real sense of the data, transcribing on its own is very time consuming. It was agreed that a transcriber would be very helpful as I could focus on translation and data analysis. Therefore, a Tongan close friend who was fluent in both English and Tongan offered to support my research project. A confidentiality form was signed by the transcriber (Appendix G: Confidentiality Form – Transcriber). The transcriber was contracted to transcribe the other three participants' talanoa. Transcription was carried out from mid-January to April 2019. The transcriber enjoyed and learnt from the participants' stories

as per email *"I have enjoyed thoroughly. I have learnt so much about diabetes from just listening to their stories" (S. 'Alofi, personal communication, April 2, 2019).*

Transcription was written in the language used. The transcripts were 10–22 pages long. I checked each talanoa transcript against the audio recording, to make sure the data, particularly the Tongan expressions, were appropriately transcribed. I was able to recall and record immediately after the talanoa, in a reflective journal, the body language, gestures and other essential non-verbal communication forms used. In addition, I listened to each recording many times over to make sure that I was thoroughly familiar with them.

Crafting

Crowther et al. (2017) demonstrated that working with crafted stories is congruent with hermeneutic phenomenology. I worked with stories obtained via talanoa then crafted each verbatim transcript into a story, making it easy to read and omitting grammatical errors but ensuring I kept the participants' meaning as recommended by (Smythe et al., 2008). I respected the participant's experiences as I worked with the verbatim transcripts, corrected grammar, and removed "aaa, heee, and umm" to get clearer and focused stories to be translated and interpreted (Appendix H: Crafted story).

The reading, the listening, thinking, reflecting, talanoa to myself, and crafting brought with it understanding and interpretations of participant's lived experiences. It also provoked thinking about how culturally meaningful the talanoa for gathering data. Once a potential story was identified within the transcript, I sought to reveal what is going on, what it is like to be Tongan with diabetes. The crafting process has taken time as I dwelt with the data, reading and re-reading, re-thinking. Crafting stories was carried out in February and April 2019

The transcript was password protected and send by email to participants; they were asked for their feedback. This was in line with Tongan value of respect and reciprocity, reaffirming the relationship by keeping them engaged, by seeking their permission to continue using the information given in the talanoa. None of the five participants responded to my email nor returns transcripts after a month. I assumed that the

participants did not have any changes. However, I felt that it was important to follow up with a phone call.

None of the five participants had any alterations and confirmed that they were happy with the transcripts as true records of our talanoa. The transcripts reflected the participants' meaning and captured the essence of their stories. The follow-up phone call was important to confirm the participants' responses. As a Tongan, I am familiar with the preferred verbal communication over written response. It was also with courtesy and respect, knowing that all participants were leaders, and they could be busy and did not have time to respond to my email. In my phone call, I had the opportunity to go through the transcripts with each participant. This is important in the issue of the trustworthiness of my research process.

Translation

Tongan crafted stories (data) were translated into English (Appendix I: Crafted story translated into English) because it was necessary to discuss the data with non-Tongan supervisors and to present this thesis in English. I translated the stories into English during the months of May to July 2019. Most of my data was in Tongan so I had the added challenge of working between two languages. There was the ongoing challenge that any translation to English may change the meaning. At the same time, the act of translating drew me to think even more carefully about what was being said. Throughout the thesis, I have chosen to include the Tongan version to enable the Tongan reader to stay close to the original telling.

The Secondary Supervisor and the Expert Advisory Group checked the English translated versions to ensure that the translation to English did not change the meaning.

Interpretation and data analysis

van Manen (1990) specified that "in phenomenological research the emphasis is always on the meaning of lived experience" (p. 62). Engaging in hermeneutic phenomenological research was described by Smythe et al. (2008) as follows: "working with the data is an experience of 'thinking'. It is to let thinking find its own way, to await the insight to emerge" (p. 1392). Hermeneutics is designed to account for the way that a member of a given culture is able to interpret a text drawn from that same culture's history.

In this study, the process of gathering and interpreting talanoa of lived experience occurs. van Manen (1990) described this as requiring the researcher to find creative methods suited to the topic of interest, the context, and the research participants. It occurs simultaneously through six stages (van Manen, 1990). It starts with talanoa, drawing out a conversational relationship with Tongans with T2DM. The lived stories and their analysis are progressively developed into initial interpretations, themes and deeper understanding by moving between the whole and parts, leading to new and different understandings (van Manen, 1990).

Analysis process

Analysis of the talanoa involved listening to the audio recordings numerous times (5 – 10 times). It also involved close and repeated readings of the verbatim transcripts as I became more and more familiar with the content. I worked with both Tongan and English translated versions of the scripts. I contemplated what the participants' words might be revealing, noticing similarities and differences in participants' stories, reflecting on, and identifying the meaning, and moving between the whole and the parts, between the Tongan and English scripts. The written data became stories and themes. This led me to new understandings. It helped me 'see' what I already knew but had not previously articulated.

As set out in Figure 1, Chapter 3, the analysis of data occurs through a hermeneutic cycle of talanoa through reading, writing, reflecting, interpreting, writing and rewriting (van Manen, 1990). Talanoa and van Manen's (1990) six research activities guided me with the analysis and interpretation of participant's stories. The six stages are described as follows:

1. **Turning to the nature of lived experiences (Tala):** Here, van Manen (1990) reminded us, lived experience (being a subjective experience) opens up multiple interpretations of the same phenomenon. In this study I have had talanoa (conversations) with Tongans with T2DM who "tala", tell, share multiple ways of knowing about what it means to have diabetes. At this step, I create safe space to talk and share a conversation with participants, listening to lived stories, as I am deeply connected with participants (Fa'avae et al., 2016). I listened to their stories, their testimonies, as they trusted me to understand and respect their lived experiences. Talanoa build upon trust relationship in the concept of tauhi vā, and participant are encouraged and respected with their stories. I read through the transcripts, talanoa to myself and had a sense of connectedness and 'feel' for the participants' experiences. I made notes of the themes that emerged, and I became aware of the multiple faka'uhinga (interpretations) of the same phenomenon. Talanoa took place between me as

the researcher (and insider) and the texts (transcripts), in listening to the recordings and trying to reveal what it is like to be Tongan with T2DM.

2. **Investigating experiences as we live them (Tala)**: van Manen (1990) urged us to consider the nature of being within our everyday world of experience. I assert that reflection informs experience, and in reflecting we may be able to come closer to grasping the nature of an experience. In my study, the participants tala, told their own stories of their diabetes experiences and, in so doing, recognised the meaning diabetes and food, family, church, community and society holds in their lives. Talanoa occurred with myself as I reflected on the participants' stories, and I highlighted themes revealed from the scripts. I became aware that all the participants' stories were part of a collective statement: being Tongan with diabetes happened within families, church, communities and was much more complex than the individual with T2DM.

3. **Reflecting on the essential themes which characterise the phenomenon (Tala)**: In talanoa and phenomenological research we are urged to delve beneath the outward appearance of "how a thing is" and turn into "what it might be". It is to be cognisant of "what shows itself" in order to understand the nature of a phenomenon. As an insider, a researcher with pre-understanding, I crafted a narrative influenced by what I understand food and dietary management to be for those who have T2DM, based upon my own experiences. Yet, at the same time, I need to be open to the story 'this' person is telling me, which may be different from what I have come to assume. It is through the process of talanoa, reflection on what shows itself in the stories of Tongan people with T2DM that the themes come into being, thereby a slow process of uncovering occurs. Finlay (2009) submitted that the first-person accounts with which we build our phenomenological enquiry should be "set down in everyday language" and should avoid "abstract intellectual generalisations", thus underlining the significance of descriptive lived experiences and my interpretations. In such a way I dwelt with the data until I got a sense of what themes were being revealed. Talanoa creates opportunity for both researcher and participants to listen and get deeper understading of the nature of the lived experiences (Vaioleti, 2006, 2013). Talanoa to myself, tala (talk, tell) and share with my supervisors my interpretation of participants stories. I became awared of participants stories that diabetes management, treatment, dietary guidelines and meal plan provided for them could be tu'utu'uni (food rules) tala, tell and convey with power and authority. I need to be open to participants' story which was different from what I assumed.

4. **Describing the phenomenon in the art of writing and rewriting (Tala)**: It is through interpretation that the researcher comes closer to understanding the nature of the phenomenon through the lending of written words to those spoken. The crux is re-writing. Through re-writing what has been written, the researcher can unpack the deeper layers hidden in speech. In my study, participants articulated their stories which I crafted into written scripts. It is through the process of writing and re-writing my interpretations that stories unfold which germinate into greater depth in a mode that allows the "intention and meaning behind the appearance" to be understood (Moustakas, 1994, p. 9). As I kept seeing things, the writing got deeper as it began to show the phenomenon. Tala, tell, describe and write interpretation, talanoa with the texts, write and rewrite as it come closer to the loto (heart), 'atamai (mind) and laumālie (soul/spirit), participants build trust, respect and relationships which foster stability and inclusiveness in talanoa.

5. **Maintaining a strong and orientated relation to the phenomenon (grasp of the phenomenon) (Noa):** The root of van Manen's point here is to remain oriented to the research question by avoiding distractions which may lead the researcher down an unfruitful track. As a researcher wishing to unpack the lived experiences of being Tongan with T2DM, I have found it is essential to focus on what is germane to my study. The study area is broad in that it includes (links) other long-term conditions, non-communicable diseases (NCD) and Tongan ways of living. By remaining strongly orientated to what I am asking, I have been able to draw essential themes from the data and reveal deeper meaning that constitutes the diabetes experience. I have kept coming back time and again to my research questions to ensure I did not get distracted by other interesting but unrelated data. Tauhi vā, maintaining relationship with phenomenon, staying true to participants' story to achieve noa. A neutral and zero differences, participants and researcher are in agreement with themes and interpretation of stories, strategies for diabetes management and food practices to understand living with T2DM in New Zealand society.

6. **Balancing the research context by considering the parts and the whole (Kakato)**: van Manen (1990) asked "what is it? What is this phenomenon in its whatness?"(p. 33). In this study, I seek to uncover the experiences of being-Tongan and living with T2DM especially in relation to food practices. I seek the nature of what 'is'. To be reflective in this process I must be able to see the study in its entirely – the overall structure; and I must also be cognisant of the parts that comprise that whole and ask myself if my methods are "the right fit" in order to extrapolate meaning from the data. I kept asking "What does 'this' story say?" "How does that relate to what other stories say?" Thus, I kept working between the parts and the whole. Talanoa and reflect in the process of tala and noa to achieve balance and kakato (whole). As a point of agreement achieved and a sense of balance and harmony is established (Mahina, 2008).

Identifying thematic formulations from the data is not a rule-bound process, but a free act of "seeing" meaning (Smythe et al., 2008; Vaka'uta, 2009; van Manen, 2016). Quotes were highlighted and cut-and-pasted to match other similar quotes made by other participants in the study. I made copies of the transcribed materials. The copies were used to identify themes in the text by using highlighter pens to note their presence. The recorded text was thoroughly re-read and all the marked relevant phrases, or sentences of recorded conversation, were checked by going over the audio recordings and transcripts. I needed to be sure that the highlighted material was true to the words and experiences of the participants in the study (Appendix J: Analysis Process – Highlighted quotes, cut and paste).

The process of interpretation continued by re-reading each story's (crafted) file saved in the computer. By re-reading the narratives, ideas began to emerge, and a deeper level of interpretation began to take shape. I kept a reflective journal throughout the process, recording my thoughts, observations, considerations, and using Tongan phrases, which

supported the emergence of the meanings of food practices (Appendix K: Emerging themes – summary from reflective journal). I also recorded talanoa with my supervisors and the Expert Advisory Group, as well as conversations with myself during the re-reading, writing, and rewriting the themes that were surfacing. Interpretation, as suggested by Koch (1999), "is what I believe the person or text is getting at" (p. 74). It is a way of drawing meaning from the individual participants' stories, identifying themes, drawing on participants' stories, on Tongan philosophy, values, and customs, and making sense of the text.

The next stage of the analysis is the writing and synthesising my findings presented in Chapter 5.

The outcome of the individual talanoa led to group talanoa to intensify my understandings of some of the themes emerging from the data. While I was able to interpret and analyse the participants' stories of their diabetes and food practices, I felt I did not have enough knowledge to elaborate on or interpret the roles of people who help with diabetes management and food preparation. I felt their voices were an important addition to the study. Further, I wished to engage the wider group in thinking-with-me.

Phase 2: Group talanoa

The purpose of phase 2 was to take the insights from phase 1 to a wider group of Tongans (some of whom had diabetes and others who had an interest by association) to work collectively with them in discerning a way forward. It involved inviting an additional 15 participants to be part of group talanoa.

Recruitment process

The same IP appointed to recruit participants for phase 1 continued with recruitment of participants for group talanoa. This was important for consistency and built upon the trust relationship established in phase 1. The choice of who to invite was based upon the community leaders who indicated their desire to participate in phase 2. IP engaged with interested participants and confirmed their availability and commitment to attend group talanoa. Consent to participate was offered verbally to the IP with an agreement

to be contacted by myself within two weeks. The recruitment took placed in October 2019.

All participants preferred to deal directly with myself, the researcher, as they knew, trusted and were supportive of my research study. I explained the purpose and detailed information about my study. Once they confirmed their willingness to participate, I emailed the participant information sheet (Appendix L: Participant Information Sheet – Group Talanoa) and consent form (Appendix M: Consent Form – Group Talanoa) to read. I followed up with a phone call one week later, answered any questions they had and negotiated a convenient time for our group talanoa. I was conscious of giving the participants a choice about the time of the day and where the group talanoa took place.

All participants agreed to have it at my church residence in Mangere, which was accessible, known to all participants, and easy to find. Participants were allocated into one of three group talanoa according to the day and time that suited them best. One talanoa group was held in the evening and two others were held after lunch. All group talanoa were held in November and December 2019.

Involving key influencers in the second stage of the study was important to get family members' support and commitment. As expected, they saw more clearly the changes that are needed to support Tongan people with T2DM. The findings from the individual talanoa, the participants' stories, were presented to the participants in phase 2, the group talanoa, with the overall question – What can we do?

Participant profiles

All five participants from phase 1 were happy to participate and agreed to continue with phase 2. However, two of them could not attend as one was out of the country, and one participant was looking after her elderly mother, who was unwell.

The participants' general profiles include each participant's gender, age, diabetic diagnosis information (age of diagnosis), and types of leadership role. Each participant's identity is protected by using pseudonyms. Participants who took part in phase 1, the individual talanoa, retain the same names. A summary of the participants with their T2DM profiles is presented in Table 2.

Thirteen of the 17 participants of group talanoa had T2DM. They were six women and seven men. Three participants were diagnosed when aged 35 years old or younger and 10 participants were diagnosed when aged 40 years or older. The youngest participant with T2DM was diagnosed at 32 years old and the oldest was diagnosed at 60 years old. All participants with T2DM have lived with diabetes for five years or longer. They are taking OHA with three taking insulin as well.

Four of the 17 group talanoa participants did not have T2DM. They were invited to attend as people who support their spouses (husband or wife) diabetes management and food practices. All four participants supporting role include food preparation, cooking and shopping for their spouse. Although none of them have a first-degree family member with T2DM, the risk of developing T2DM were high. All four participants are Pacific, aged 50 years old and being overweight. Two participants had pre-diabetes and/or other long-term conditions.

Table 2: Profile of participants in the three group talanoa

Participants	Gender	Age range	Age (yrs) at diagnosis	Years of experience	Leadership role
Group 1					
Tupouta'anea*	F	60 – 65	50	14	Church Minister
Tevita	M	65 – 70	58	9	Spouse
Salome*	F	50 – 55	41	13	Professional
Pita	M	50 – 55	NA	NA	Spouse
Meleseini	F	60 – 65	54	9	Professional
Semisi	M	60 – 65	NA	NA	Spouse/Church Minister
Group 2					
Soane	M	70 – 75	60	13	Church Minister
'Alisi	F	60 – 65	58	6	Spouse
Saimone	M	55 – 60	53	5	Church Minister
'Olivia	F	60 – 65	NA	NA	Spouse
Sioeli	M	35 – 40	32	5	Professional
'Ifalemi	M	55 – 60	45	14	Church Minister/ Youth Leader
Group 3					
Kotoni*	M	60 – 65	48	12	Church Minister
Seini	F	50 – 55	35	15	Spouse
Mosese	M	50 – 55	45	10	Professional/Cultural
Patiola	F	50 – 55	NA	NA	Spouse/Professional
Senolita	F	45 – 50	33	15	Church Minister

* Participants in the individual talanoa

Overall, all group talanoa participants are married with children and five couples have grandchildren. They live with four or more people at home (in the household), making a total of ten Tongan family households. All participants had lived with or cared for a person with T2DM for at least five years or longer. Fourteen participants are couples, with the remaining three being individual participants.

I provide further relevant information around Tongan families to provide context for the group talanoa. All participants migrated with young families or have only New Zealand-born children. If the wife has diabetes, then her husband prepares meals, and vice-versa. Participants' gender roles have changed, and all seven male participants either prepare family meals or can prepare their own meals. In Tonga, women's duties include cooking and food preparation for the family while men grow food on the plantation. Men are involved in cooking mainly when doing 'umu' (earth-oven cooking) especially for the

Sunday meal ('Ahio, 2011; Leslie, 2002; Pollock, 1992). In addition, here in New Zealand, participants prepared food for themselves as their children prefer to cook or buy their own food. In Tonga, family meal preparation is a shared household responsibility and children are trained to help parents and eat together. It brings the family together ('Ahio, 2011).

All participants were born in Tonga and had migrated to and lived in New Zealand for 20 years or longer except for one couple, Saimone and ‘Olivia. They had lived in New Zealand for less than two years. All participants have strong affiliations with the community and the Christian church in New Zealand and Tonga. All participants are well respected within the Tongan churches and the community. They hold leadership roles within their professions, churches, and community programmes.

As with the individual talanoa, the findings are presented in Tongan with English translations where they were spoken in Tongan, or just in English where they were spoken in English. It should be noted that some Tongan terms and concepts do not translate directly or exactly into English and vice versa – some English terms and concepts do not translate into Tongan.

Gathering of stories – Group talanoa

Each group talanoa started and closed with a lotu (prayer) led by one of the participants (Appendix N: Opening Prayer - Group Talanoa). It is part of the Tongan protocol to acknowledge Tongan spiritual and cultural values of ‘apasia (respect, in a term used for God only) and seek God’s wisdom and guidance with the talanoa. The talanoa were conducted mainly in Tongan, and participants were free to use English or a mixture of Tongan and English, whatever the participants preferred.

The three talanoa groups were different. Group 1 got straight to talanoa and sharing, as all participants were known to each other. The other two groups wanted to know more about each other and the research, as the majority had not participated in the initial individual talanoa. Therefore, a brief about the research project and information sheet was provided. A summary of individual talanoa findings and the purpose of the group talanoa was included. A round of introductions by each participant was undertaken to establish rapport and relationship, and to connect each group’s participants.

In addition, Tongan cultural values of faka'apa'apa (respect), mamahi'ime'a (reciprocity) and tauhi vā (maintaining relationships) were demonstrated (Kalavite, 2019). There was no need to allocate the tasks of who should say the prayers as one would know who among the participants should speak and when they should speak. The opening prayer for Group 1 was delivered by the host church minister, as he welcomed participants to the church residence. Tongan cultural values include 'ilo'i hoto tu'unga (know your status) and fatongia (duties). Tongans takitaha 'ilo'i pe hono tu'unga, know their status in relation to the Tongan social structure and hierarchy in the community. All participants know how they relate to each other with respect, and the eldest and/or senior church minister says the prayers. Therefore, participants knew who would say the opening and closing prayers within each group.

Audio recordings

As with individual talanoa, all group talanoa were audio recorded with a voice recorder for the transcribing process and recordings were stored as password protected digital files. Participants were briefed on this method of recording and the importance of keeping confidentiality. This was also included in the participant information sheet and the consent form. Participant consent forms were signed.

At the end of each group talanoa, the researcher presented a summary of the data collected and asked participants for their feedback before the closing prayer was said. All participants confirmed and were happy and agreed with the summary and confirmed as true record of each group talanoa.

Transcribing

Each group talanoa was transcribed verbatim after each group session. I transcribed the first group talanoa and the transcriber who had worked on the individual talanoa transcribed the other two group talanoa data. Transcription was written in the language used and transcripts were between 23 to 30 pages long. I checked each talanoa transcript against the audio recording, to make sure the data, particularly the Tongan expressions, were appropriately transcribed. I listened to each group talanoa audio recording two to three times after the talanoa, and reflected on the passion of personal stories, the body language, gestures and other essential non-verbal communications

forms used. In addition, I listened to each recording several times during writing and rewriting to make sure that I was thoroughly familiar with the group talanoa recordings.

Transcription was carried out from December 2019 to January 2020.

Interpretation and data analysis

Analysis of the group talanoa involved listening to the audio recordings and reading the verbatim transcripts numerous times. I worked with the Tongan version scripts, moved between the parts and the whole. I contemplated what each participant's words and recommendations might be revealing, noticing similarities and differences in the scripts, once again, reflecting on, and identifying the themes. For example, several talanoa mentioned education and knowledge, family involvement in diabetes management and food practices, tauhi vā, maintaining relationships, and fulfilling roles and responsibilities. By grouping ideas that were similar to others, I began to settle into the findings presented in Chapter 6.

Trustworthiness and rigour

A qualitative researcher needs to demonstrate that the research is trustworthy and is useful for practice (Anderson, 2017). Koch (1996) suggested that the integrity and quality of the final product is dependent upon the researcher's ability to demonstrate that the research is trustworthy. According to Smythe et al. (2008), the researchers are the first to know if their research is trustworthy. These are researchers "who test out their thinking by engaging in everyday conversations with those who share the interest" (p. 1396). Decisions are accounted for and there is a clear link between the philosophy and the findings. Trustworthiness involves credibility, transferability, resonance, and confirmability.

This research is about the lived experiences of Tongans with T2DM. The principle of rigour guided me when I was crafting participants' personal stories (Finlay, 2006). Each participant received a copy of own crafted stories, and I went through the transcripts with each participant. All participants did not have any changes and confirmed they were happy with the talanoa and the stories. Furthermore, the research process of selecting quotes, describing, and interpreting data, and carrying out the analysis. This was done in talanoa with others, in testing out their thinking and in the resonance

gained in the conversation with others. I have felt a sense of direction and alive-ness in talanoa with my supervisors, participants, Expert Advisory Group, and Tongan patients at my clinic, and with colleagues who had an interest in my study. I have laid open my writing, thinking and interpretation. The 'phenomenological nod' following talanoa, sharing, and discussions indicated the trustworthiness of my research. This gives the study integrity and will inform future research.

Credibility

The fundamental notion in a talanoa and hermeneutic phenomenological study is of the potentiality of multiple meanings related to the phenomenon. In this study, the participants' lived experience has provided the truth or value of being Tongan with T2DM as heard through individual and group talanoa rather than my own experiences. In this study, credibility is shown when interpretations are accurate and resonate with people who have had similar experience; that is, they would immediately recognise the experience they had lived (Beck, 1993; Rubin, 2012; Sandelowski, 1986). As a Tongan who is actively involved with the Tongan church, community, and diabetes services, I shared the same identity, language, both culturally and spiritually connected with study participants. As a researcher, I am accepted, supported, and who may be gathering a great depth of stories, and a more accurate interpretation with faithful descriptions of the lived experience.

Talanoa provided context where participants talked openly and I had opportunities to confirm participants' viewpoints, thus providing validity to the findings. Such descriptions provide insight that is self-validating, with others recognising the text as a statement of experience (Husserl, 1970; McGrath & Ka'ili, 2010). According to Lincoln and Guba (1985), accurately identifying and describing the topic and detailed descriptions of the complexities of experience demonstrate credibility.

Furthermore, credibility suggests that participants are given opportunity so that they can check and validate their personal stories by the researcher. I did this by presenting a summary of group talanoa to participants to check and confirm before the end of each session. All participants were happy with the main points as a true record of their talanoa. It is important to respect the participants who were willing to share their time and personal stories to help with understanding their world (Patton, 2002). I have also

received feedback from my supervisors on my data analysis, interpretation and in writing the findings.

Transferability

In this research, talanoa was used to explore the lived experiences of a segment of Tongans with T2DM in Auckland, New Zealand. The study can be transferable to other populations and sites that have similar characteristics and cultural backgrounds to those of the original study population (Patton, 2015). This study included a wide range of participants – men, women, church ministers, community leaders, and family members. The study sample population provides an appropriate qualitative study population to gain in-depth data. The five individual talanoa and three group talanoa were sufficient as they provide a range of personal stories from the Tongan community. In addition, Rubin (2012) also suggested that the findings of qualitative research could become transferrable to other populations and other areas if the interviewed population and context are similar to other groups.

Resonance

Resonance is the "felt effect" of the experience of the reader as he or she reads the study. The reader will have his or her own experience as a result of reading this study, and my hope is that through the reading of this thesis the reader will have insights about their own experience. They may respond to the findings with their own personal stories and interpretation. It will resonate with his or her own similar experience in some way. Sometimes the reader will bring new ways of thinking about the stories.

I held informal talanoa with many Tongans in the community, focussing on what they understood about T2DM, what they had done in terms of modifying their food intake at home, church, and family functions, and at birthday, wedding and funeral ceremonies or their church annual donations and feasting. Though the information collected through these talanoa was not integrated into the research information gathering and analysis, I found these were very useful in terms of enriching and reconfirming the information gained during the individual and group talanoa.

Ultimately, this talanoa and hermeneutic phenomenological study is my interpretation which can only ever be a part of the whole of potential meaning. This is beyond the researcher's capacity to know and sits with the reader to decide.

Strengths and limitations of talanoa and hermeneutic phenomenology

The strength of the methodology described in this thesis is demonstrated in the trustworthiness and rigour section above. The limitations are that the research focuses on lived experiences of Tongan people with T2DM that are unique to the researcher and the participants. This prejudice means that the study cannot be generalised in the same way that is possible for quantitative data, and neither can reliability or validity be established. However, talanoa brings more depth to the study.

The research sample of church, community and professional leaders provides an appropriate qualitative study population for Tongan people in Auckland. Individual talanoa and group talanoa provided opportunity to gain knowledge about participants lived experiences and addressing the study questions.

i. What is the meaning of being Tongan with T2DM in New Zealand?

ii. What are the factors that determine the food practices of Tongan people with T2DM in New Zealand?

iii. What can we do to help Tongan people with T2DM better manage their diabetes?

iv. What strategies can help minimise and prevent the development of T2DM for Tongan people in New Zealand?

Summary

In this chapter, I have outlined the process and details of researching the experiences of Tongan people with T2DM. I have described the ethical issues, the recruitment of the participants, the gathering of their stories through individual, and group talanoa, the crafting of the stories into meaningful accounts of their experiences, how I worked with the Tongan data, how I made sense of their experiences, how I translated Tongan data

into English language, interpreted data, and identified themes, and how the findings are presented in the following chapters.

Talanoa and hermeneutic phenomenology approaches have been used to seek to understand the lived experiences of Tongans with T2DM, and of family members involved in diabetes management and food practices. The five participants invited for phase 1, the individual talanoa, were Tongan church and professional leaders who were willing to share their stories on a one-to-one open talanoa about their lived experience with T2DM management and food practices. Seventeen participants took part in phase 2, three group talanoa sessions. Three participants from individual talanoa with their spouses plus other church and professional leaders who collectively seeking a way forward to support people with T2DM. Participants' anonymity, autonomy and dignity was protected. Tongan cultural values of faka'apa'apa (respect), tauhi vā (maintaining relationships), 'ofa (love) mamahi'ime'a (generosity) were observed during recruitment of participants and the spiritual value of lotu (prayers) were part of each talanoa session.

Chapter 5 Findings – Individual Talanoa

Our language is blessed with a great capacity for capturing the most subtle shifts in mood and the most minute changes in the state of the sky and the wind and the sea and the trees. …. All these things which provide quality and joy to our national existence and a richness and depth to our culture are based on our generously endowed land and sea.... If you want to communicate with people you have to touch them, touch their sensitivities.

(Hau'ofa, 1999 cited in Ellis & Hau'ofa, 2001, p. 22)

Introduction

The purpose of this chapter is to present the research findings from individual talanoa with five Tongans who have T2DM. The findings aimed to answer four research questions, as follows:

i. What is the meaning of being Tongan with T2DM in New Zealand?

ii. What are the factors that determine food practices of Tongan people with T2DM in New Zealand?

iii. What can we do to help Tongan people with T2DM better manage their diabetes?

iv. What strategies can help improve food practices and diabetes management of Tongan people with T2DM in New Zealand?

The participants talked about how they found out that they had diabetes, building a sense of understanding about how they developed T2DM, and their experience of learning to live with this condition. Specifically, the talanoa focused on what it is like to be Tongan with diabetes, how diabetes influences food practices, which led to conversations about how they lived with diabetes within their family, church, community and in New Zealand society.

All five participants were diagnosed with T2DM in New Zealand and had lived with diabetes for more than 10 years. They are taking Oral Hypoglycaemic Agent (OHA), diabetic tablets, and one participant is taking insulin as well. Three participants were diagnosed when in the forties age bracket and two in their fifties. The participants aged group are four in their sixties and one participant is in her fifties. They were all born in

Tonga and migrated to live in New Zealand 20 years ago or more. One participant has a first-degree family history of T2DM, while the other four participants did not have any history of diabetes within their family. Two participants' partners have T2DM. The complexity of managing their individual diabetes can be compromised at home, depending on how much support they have from their family especially spouses and children.

The findings of this research are presented in seven contexts: Getting the diabetes diagnosis; Building an understanding of diabetes; Diabetes management specifically personal/self-management; Diabetes management specifically on what it is like being diabetic in the family; Diabetes management and what it is like being diabetic in the church; Being diabetic in the community. I also explored Tongan leaders' experiences of being Tongan in New Zealand environment and what changes they would like to recommend in relation to health and Tongan cultural values.

The findings are illustrated by quotes from the participants presented in Tongan with English translations where they were spoken in Tongan, or just in English where they were spoken in English. It should be noted that because the Tongan concepts and terms do not translate easily or exactly into English, I have sought to present these translations in a form that is faithful to the participants' meaning. The participants' stories are interpreted through my lens as a Tongan, member of the community and church member, a New Zealand Registered Dietitian (NZRD) and diabetes specialist.

The following section discusses how participants build a sense of understanding of how they became diabetic, how they found out and their reaction to getting this diagnosis.

ʻIloʻi ʻoku ou suka - Getting the diabetes diagnosis

Introduction

This section draws on the participants' personal experiences and understanding of diabetes. Participants talked of how they found out that they had diabetes, and their initial reaction to the diagnosis. They talked about building a sense of understanding of how they become diabetic and what matters to them because of who they are and what they do. This initial platform of understanding shapes the ongoing way they live with the condition, specifically in relation to eating habits and food practices.

Reaction to initial diagnosis of diabetes

For all the five participants, receiving a diagnosis of diabetes came as a surprise. Even for those with risk factors for T2DM, like having diabetes in the family (family history), being of Pacific descent, being aged 30 years old and older, and having what might be judged 'poor' eating habits, they did not expect to receive such a diagnosis. The 'shock' of being told they had diabetes happened for most during a consultation when they were feeling unwell and in pain. They were 'told' they had diabetes. They could have been diabetic long before diagnosis, but they were not aware of signs and symptoms, nor screened for diabetes.

Tupouta'anea

For Tupouta'anea, the diagnosis came unexpectedly.

Tupouta'anea *Na'e toki 'ilo pe 'oku ou suka 'i Nu'usila ni. Ko 'emau ō 'o celebrate hoku ta'u 50. Mau foki mai ki 'api ni, pea u ongo'i 'oku mamahi hoku fatafata. Tā leva 'a Viliami (my son) ia ki he ambulance. Ha'u ambulance, kou fai atu he tala ange, 'oku ou sai pe. Kae talamai ke mau ō ki falemahaki. Test 'a e heart, sai pe ia kae ma'u au 'e he suka. Foki mai mei ai mo e fo'i'akau.*

English *I found out that I got diabetes here in New Zealand. We were out celebrating my 50th year's birthday. When we got back home, I felt some types of pain on my chest. Viliami (my son) called the ambulance. Ambulance came and I tried to tell them that I was fine. They said that we should go to the hospital. Did a test for my heart, it was all right, but I have diabetes instead. I came home with some diabetes medication.*

Tupouta'anea was not aware that she had diabetes. She was diagnosed at the hospital when she was taken by the ambulance for chest pain. Being in pain triggered her family to call for medical help. It must have been life-threatening for her son to call an ambulance. Her son was worried about her heart. A family panic required immediate assessment. Tupouta'anea did not think that she needed to go to the hospital. The ambulance team insisted that she needed further investigation. She probably thought that it was not serious, and she was able to tolerate the pain and felt fine. At the hospital, her heart was clear, but she received a diagnosis of diabetes. The diagnosis was unexpected, as she could not relate chest pain to diabetes. Tupouta'anea was probably

not aware of her risk of getting diabetes, so her diabetes diagnosis was a surprise. She possibly had many questions in her mind wondering "Ko e ha 'oku ou suka ai?", Why am I getting diabetes? What caused her to end up with this diabetes diagnosis? Was it something that she ate or drank at her birthday? Is this what you get when you turn 50? Tupouta'anea came home with medication and no doubt with instructions about when to take it. It raises questions of the impact of having the word 'diabetes' thrust upon one without necessarily understanding the lifestyle implications that are a significant aspect of diabetes management.

Kotoni

Kotoni had a similar experience with the initial diabetes diagnosis.

Kotoni *Na'a ku puke, ko e langa hoku kete. Na'a ku 'alu 'o sivi pea talamai 'e he Toketā 'oku 'ikai ke 'i ai ha me'a ia 'e hoko ki hoku kete. Ka 'oku ma'olunga hoku suka. Ko hono 'ilo ia 'oku ou suka, ma'u kei si'i pe au. Na'a ku kei ta'u 47 pē. Na'e 'ikai te u 'amanaki 'e ma'u au 'e he suka. Na'a ku kau au he longomo'ui 'i he ngāue mo e makaka he 'alu holo. Na'a ku sai'ia ke u ngaungaue he taimi kotoa pe.*

English *I got sick, I had a stomach-ache. I went for a check-up, and the doctor said that there was nothing wrong with my stomach. But my blood sugar level was high. That was how I learnt that I have diabetes, I got it young. I was only 47 years old. I did not expect that I would get diabetes. I was highly active both in my work and in wherever I go. I liked being active all the time.*

Kotoni's initial reaction to his diagnosis was disbelief. He went to see the doctor as he was in pain, with a stomach-ache. Like Tupouta'anea, being in pain triggered him to seek medical help. He was told that there was nothing wrong with his stomach, but he had diabetes instead. Kotoni was surprised with the diagnosis, most probably confused with lots of unanswered questions. How could he have diabetes at 47 years old? He thought that he was too young to get diabetes. Kotoni considered himself to be a highly active person and did not expect to get such a condition. He thought that living an active lifestyle prevents diabetes. Therefore, he was surprised with the diagnosis, at his relatively young age and with his current routine. Like Tupota'anea, Kotoni was surprised with his diabetes diagnosis, most likely being given medication to take without a basic explanation of lifestyle and diabetes management.

Kotoni went on to share that he had a family history of diabetes, but he did not think that would make him get diabetes.

Kotoni *Ko hoku fāmili ko e fāmili suka. Na'a mau tupu he motu'a na'e suka. Na'e suka mo 'eku fine'eiki. Ko e talu pe e suka mei Tonga, ka na'e 'ikai te mau 'ilo ko e suka. Na'e toki ō mai ia ki heni 'o 'ilo ko e suka. Na'e suka lahi e fine'eiki pea mate pe mei he suka. Ko au mo hoku tuofefine si'isi'i taha 'oku suka.*

English *My family is a diabetic family. We are descended from a father who had diabetes. My mother was also diabetic. They got it in Tonga, but we did not know it was diabetes. We found out when we moved here. Our mother's blood sugar was very high, and she died from diabetes. I and my youngest sister have diabetes.*

Kotoni was aware that his parents had diabetes, but he was still surprised when he was told that he had diabetes. He remembered that their diabetes started in Tonga, but his family did not realise it was diabetes until they moved to New Zealand. Kotoni knew that his parents were unwell but were not familiar with diabetes signs and symptoms nor diagnosis. Maybe there was no test or screening for diabetes in Tonga back then. Perhaps Kotoni could not relate his diabetes diagnosis to what he saw in his parents' diabetes experiences. It was most likely that his parents' diabetes diagnosis happened at an older age, and they did not have stomach pain. Therefore, Kotoni thought that, at 47 years of age, he was too young to get diabetes. Perhaps he thought that diabetes was a disease of older people.

Kotoni probably did not present with any classical presentation signs and symptoms for T2DM. However, he was at risk of having T2DM as he had a strong family history of diabetes (both parents and a sister), was of a Pacific descent and was aged 47 years old. Perhaps Kotoni was not aware of the risk factors for developing T2DM or he may have been in denial. As the risk factors for developing T2DM include having diabetes in the family (parents, grandparents, brothers, or sisters), being of Pacific descent and being aged 30 years or older (Coppell et al., 2013; Harrison et al., 2003). Kotoni's high-risk profile for developing T2DM raises questions about Tongans' awareness, knowledge, and level of understanding of T2DM.

Mele

Mele as a health professional knew about diabetes and Pacific people. Her diagnosis also came as a surprise.

Mele *Na'e 'ilo hoku suka, he 'eku ta'u 48. I might have been suka before that, ka ko hono 'ilo'i ia. The fact, na'e 'ikai ke suka 'eku ongo mātu'a. Na'a ku 'osi 'ilo pe 'e au ia, ko 'eku diabetes 'oku 'ikai ke tuku fakaholo ka 'oku related pe ki he to'onga mo'ui. For some reason, na'e hangē pe ko e lau 'a e tokolahi, ha hoko mai ha me'a kiate kinautolu. Na'a te pehe pe 'e kita ia that "It won't happen to me". Ka na'e 'ikai ai ha 'uhinga lelei ia, why na'a ku pehe ai that it would not happen to me.*

English *I got diabetes when I was 48 years old. I might have been diabetic before that, but that was when I found out. The fact, my parents did not have diabetes. I knew that my diabetes was not hereditary but related to lifestyles. For some reason, it was like what others say, when it happens to them. I thought, "It won't happen to me". Even though there was no good reason, why did I think that it would not happen to me.*

Mele was diagnosed with diabetes when she was 48 years old. She thought that she could have been diabetic before that. As a health professional, Mele would have known about the problems of diabetes among Pacific people. She understood the risk factors for diabetes. Mele knew that her parents did not have diabetes, but her lifestyle put her at risk of diabetes. However, she was still surprised when she found out that she had diabetes. Mele could relate to how others are in denial about the diabetes diagnosis.

Like Tupouta'anea and Kotoni, Mele was at risk of developing T2DM, being Pacific, aged over 30 years old, and overweight. Mele admitted that she is overweight, "'Oku ou sino, I am overweight" and most likely had a lifestyle of poor food choices and inactivity. Perhaps she experienced the signs and symptoms of diabetes that prompted her diabetes check-up. On the other hand, Mele could have been asymptomatic, and her health knowledge and experiences caused her to screen for diabetes. Although Mele was surprised with her T2DM diagnosis, she could relate to people who live life without expecting a diagnosis of lifestyle diseases like T2DM.

Taniela

Taniela's experience of receiving his diagnosis was a consequence of seeking a health screening.

Taniela *Na'a ku 'alu 'o sivi, ko e vili hoku kaungāme'a, ko e taha 'o e kau neesi. Vili ke u 'alu 'o sivi mo'ui lelei fakalukufua. Na'e 'ilo'i 'i hoku sivi toto, 'oku ou suka. Ko e me'a ia na'e 'ilo'i ai 'oku ou suka. Kuo laka ia he ta'u 'e 10 tupu 'eku suka. Mahalo na'e 'ilo hoku suka, he 'eku ta'u 58. Na'e 'osi mahino pe ia, 'oku matamata te u kau pe he ni'ihi 'e suka koe'uhi ko e fāmili ko ē 'eku fa'e, lahi 'aupito e suka 'ia nautolu. Ko e fāmili 'eku tamai, 'oku 'ikai ke loko lahi 'a e suka 'ia nautolu ka ko e mafu.*

English *I went for a check-up as one of my close friends, a nurse insisted. She insisted that I should have a full health check-up. My blood test showed that I got diabetes. That was how I found out that I got diabetes. It was about 10 years ago. Maybe I would have been 58 years old. It was clear that I could be diabetic because many of my maternal relatives got diabetes. On my father's side, there were not many with diabetes, but they have heart diseases.*

Taniela found out that he had diabetes when he went to the doctor to check if he had any health issues. One of the Tongan nurses and a close friend insisted that he needed to do a full health screening, which included diabetes and heart disease. Perhaps Taniela faka'apa'apa, respect his friend's professional skills and wished to tauhi vā, maintain their relationship. Tauhi vā is a Tongan cultural core value of maintaining relationships and fulfilling fatongia, duties and obligations. It was his friend's health professional's knowledge of the health system that convinced him to undertake a health check. Taniela knew that he was at risk of getting diabetes because of a strong family history of diabetes on his mother's side. He also had a strong family history of heart disease, and he was 58 years old. Like Tupouta'anea, Kotoni and Mele, Taniela was at high risk of developing T2DM but did not feel sick and therefore did not seek any medical check-up. Matoto et al. (2014) and Wright and Breitenbach (1994) studies found that most Tongan patients regard the absence of symptoms as being disease-free and therefore do not seek medical treatment nor take steps to prevent getting diabetes.

Salome

Salome is a health professional, and she understands the risk factors for T2DM. She had been unwell for some time when she went to the doctor.

Salome *Na'e ma'u au 'e he suka 'i hoku ta'u 42. 'Oku ou tui au, na'a ku 'osi suka pe au. Mahalo na'a ku suka feitama, he na'e pauni 'e 11 'eku pēpē. Ka ko hono toki 'ilo pe, he 'eku 'alu 'o sivi. Na'e lahi 'eku fa'a puke (hangē ha flu), pea sivi 'o toki 'ilo'i ai ta 'oku ou suka. Na'e 'ikai te u pehē 'e au te u suka, he na'e 'ikai ke suka 'eku fa'e. Na'e 'ikai ha taha ia 'e suka homau fāmili.*

English *I got diabetes when I was 42 years old. I am sure that I was already diabetic. I could have had gestational diabetes as my baby was 11 lbs. But I only found out when I went for a check-up. I had been unwell (flu-like symptom) for a while and the blood test result showed that I got diabetes. I did not think that I would get diabetes, as my mother was not diabetic. There was no diabetes in my family.*

Salome did not know that she had diabetes until she went to see the doctor for something else. She had been unwell for a while and decided to see the doctor. She was sent for a blood test and the result showed that she had diabetes. Salome's diabetes diagnosis was not expected as she does not have a family history of diabetes. She thought that she could have been diabetic before that, but she did not know until she went for a test. Salome was like Tupouta'anea and Kotoni; they sought medical treatment as they were unwell and were surprised to be told that they had diabetes. She was also like Mele; as a health professional, she knew that she is at risk of developing diabetes. She could have developed diabetes in pregnancy as she had a big baby. However, as she does not have a family history of diabetes, she did not expect to get diabetes.

Summary

All participants waited for a crisis before they sought medical help. No-one presented with specific signs and symptoms of diabetes nor any evidence of a screening or regular check-up that may have revealed the diagnosis of diabetes earlier. This is aligned with Matoto et al.'s (2014) study, they found that most Tongans regard the absence of

symptoms as being disease free. As diabetes is largely asymptomatic in the years preceding a diagnosis, it reduces an individual's motivation to engage with diabetes screening and health services. Being Tongan meant that participants were stoic and only sought medical help when they experienced some intolerable physical pain, were sore or aching. They tended to be unwell but never expected a diagnosis of diabetes.

Being newly diagnosed with diabetes can cause fear and anxiety, with lots of questions to which a person with T2DM needs answers and explanations from a health provider. The participants' stories raise questions about the level of understanding and knowledge of Tongan people about risk factors for developing T2DM. A wealth of research evidence and statistics show that a recognised group of people at higher risk of getting T2DM include people who have diabetes in the family, are of Pacific descent and are aged 30 years and older (Colagiuri et al., 2002; Matoto et al., 2014; Ministry of Health, 2015c; Sundborn et al., 2007; Tin et al., 2015). All five participants were aged 40 years and older, but they were still surprised at the diagnosis. This highlights the fact that Tongan women and men do not seek medical assistance early enough for diabetes diagnosis. They could have had diabetes for many years before they find out and could have developed diabetes complications in that time (Hemphill et al., 2012; Joshy & Simmons, 2006; Matoto et al., 2014). It seems that the immediate response from the health system is to start the newly diagnosed diabetic on medication without allowing for initial lifestyle education and management.

For the participants in this study, assessment and the diagnosis of diabetes happened at a health or medical centre, within a Western world context. Participants had a blood test to confirm their diabetes diagnosis. They were most likely to be told that they needed to take diabetes tablets (or some form of treatment) and to have been given an individual treatment plan to follow. For some, the diagnosis came at a time of pain when they may not have been listening closely to any information or advice. Participants may have been in denial, shocked and confused and at the same time perhaps overwhelmed with the expectation that they needed to make some lifestyle changes and be responsible for their own diabetes management. They had been diagnosed as an individual, but were returning home to a family, as well as attending Tongan church and community functions. The data that follows suggests that any education given at the

time of diagnosis, or at subsequent follow up, did not necessarily translate into associated lifestyle and dietary change.

Feinga ke mahino'i 'a e suka - Building an understanding of diabetes

Introduction

The diabetes diagnosis became a concern for the participants. They were looking for contextual cues to understand their personal experience with the ongoing development of their diabetes. Participants talanoa, reflected upon their personal behaviour, lifestyle, food choices and what might have caused their diabetes. An individual's personal beliefs, family and friends' experiences, family judgements and cultural practices all influence their understanding and acceptance of a diabetes diagnosis, diabetes management and food practices (Moata'ane et al., 1996; Scott, 2017). Participants made sense of their diabetes diagnosis in the context of their own lived experiences. As presented in the previous section, Mele shared that she knew that diabetes was related to lifestyles.

The following sections reveal certain food beliefs and practices shared by participants, and show the contexts in which food choices and eating behaviours challenge effective diabetes management.

Food choices

In humans, food choices and eating behaviour are complex and influenced by multiple factors (Moata'ane et al., 1996; Neupane et al., 2019; Scott, 2017; Veling et al., 2017). Little is known about the current dietary habits of Tongans with T2DM in New Zealand, their knowledge and attitudes on healthy eating and diabetes management (Moata'ane et al., 1996). In this study, participants' food choices are guided by distinctive factors such as taste, affordability, convenience, habits and traditions, social and cultural influences, and personal preferences.

Food taste and flavours

The taste of food plays an important role in food choice (Kourouniotis et al., 2016; Scott, 2017). Food's high in sugar, fat and salt are highly palatable and associated with increased food consumption.

Mele

Mele reflected on her food choices and living practices to get an understanding of getting diabetes.

> *Mele* *Before I got diabetes, I did not care about this stuff. I ate whatever I want, what satisfy me. Uhhh, I love junk food and there is no doubt about that. The McDonalds, I could eat McDonald for breakfast, lunch, and dinner. I like it, very tasty. I like KFC [Kentucky Fried Chicken], of course, I like Chinese foods of any kind. I like fish and chips and all that kind of stuff.*
>
> *During my school years, I did not have any money. I used to think that paradise would be having McDonald's every day. When I started work, oh well, I had McDonald's most days. I got money and that was great!*

Mele loved her food, and she ate what she wanted to eat. She acquired a taste for junk food and takeaways from a young age. McDonald's was her favorite food which she could eat at every meal. She also liked other takeaways such as Chinese foods, fish and chips and KFC. She decided what she wished to eat was based on what she could afford to buy. Mele was able to eat McDonalds most days when she was able to afford it. She did not think about diabetes; rather, she enjoyed whatever she wanted to eat. It shows that, for her, food is to be enjoyed rather than eaten for health and disease prevention. Maybe she liked the convenience of takeaway food, and the pride that she had enough money to buy such food whenever she desired.

Mele's food choices were determined by the food she liked, what was tasty and convenient, and what she could afford. Being a health professional with a high level of knowledge about healthy eating and an understanding of Pacific people's risk of developing T2DM did not improve Mele's poor food choices. Mele most likely felt well and did not see the need to change her food behaviours to prevent T2DM (Matoto et al., 2014). As discussed earlier, Mele knew that diabetes is related to lifestyle, but somehow it was not important until she had diabetes diagnosed. However, literature emphasises that people who are at risk of developing T2DM have the best chance of preventing the onset of T2DM by changing their diet and increasing physical activity

(Faletau et al., 2020). Emotional eating could be a contributing factor to Mele's food practices (Bartkiene et al., 2019).

In addition, Mele has lived in New Zealand for 50 years, so perhaps she has adopted New Zealand food habits. As Tongans migrate to New Zealand, they are exposed to different foods and ways of food preparation (Mahina, 1999). Acculturation is how behaviour changes in a new or different cultural context ('Ahio, 2011; Borrows et al., 2011). Mele has developed a tendency to eat junk food and takeaways which are high in fats and sugar because it is an easy and tasty option in her current context.

Sweet and sugary food

In the Tongan language, "suka" means sugar, sweets, as well as diabetes (Churchward, 1959, p. 436). It refers to someone who suffers from sugar diabetes. Because diabetes is a disease where blood sugar levels are too high, study participants claimed that eating lollies and too much sugar caused diabetes. It is all too easy to think that eating too much sugar is the cause, but the impact of sugar consumption on health continues to be a controversial topic. Excess consumption of sugar may indirectly promote the development of T2DM but is associated with weight gained and insulin resistance in T2DM (American Diabetes Association (ADA), 2018; Clemens et al., 2016; Malhotra et al., 2019; Stanhope, 2016). Furthermore, Sofia et al. (2020) investigated the possible link between diabetes and individual taste function in 32 participants with T2DM and 32 without T2DM aged between 18 and 65 years old. The study concluded that there could be a general decrease of taste function that led people with T2DM to search for foods richer in sugars.

Tupouta'anea

Tupouta'anea tried to understand what caused her diabetes. She thought that eating sweets and sugary food was the problem.

> *Tupouta'anea Talu pe 'eku tupu 'a'aku mo e fai e me'a koe kai lole. Ko e ma'u pe 'eku ki'i seniti, kai lole. A'u mai ai pe ia ki he'eku 'alu 'o kolisi mo 'eku 'alu 'o ngāue. Ko e ai pe ha seniti, kai lole. Kaikehe, toki ha'u ai pe e suka ia, ka na'e hangē ia ha konga hoku sino. Mahalo na'a ko e kamata pe ia 'a e suka pea fiema'u pe ia, ke crave pē ki he suka (mo e kata…).*

English *I ate lollies since I grew up. Whenever I got money, I bought lollies. I continued to do that in my high school years and in my working days. Whenever I had money, I continued to eat lollies. Anyway, then I got diabetes, but sweets/sugar was kind of a part of my body make up. Maybe craving for sweets were early signs of diabetes (with giggling…).*

Tupouta'anea described her habits of eating sugar and sweets from a very young age. She believes that those habits contributed to her diabetes. Tupouta'anea desired sugary foods and sweets throughout her life. Like other children of her era, she probably used her school lunch money to buy lollies and was pleased that she could afford to buy more sweets when she got a paid job. Tupouta'anea was not surprised that sweets and sugary food increased her risk of getting diabetes. She made sense of her own diabetes control in the context of her own lifestyle and food practices.

Although diabetes education and dietary advice has changed over the years, the common belief that an excess of sucrose (table sugar) was an important cause of diabetes was the education before the 1970s (Malhotra et al., 2019; Mann & Truswell, 2017). Tupouta'anea claims that her excessive intake of lollies and sweets raised her blood sugar level, hence her diagnosis of T2DM.

Tupouta'anea reflected on some dietary changes that she had made since she was diagnosed with T2DM.

Tupouta'anea *Ko e ta'u 'eni 'e 15 'eku suka, 'e 16 he ta'u ni. Na'e 'ilo pe 'eku suka pea u tokanga leva ki he kai. 'Oku ou to e ki'i tokanga ange he taimi ni. Ko e taimi ia ko é, na'e suka pe ia, hangē na'e va'inga'aki pe. Suka pē, kae kei kai pē, na'e va'inga'aki pē. Na'a ku sai'ia he 'ota māsolo, ka 'oku tatava foki. Ko e teuteu pe ke u 'ota, kuo 'omai ha 'aku pā sokoleti, ke fai 'aki e fakamelie. Ko e toki ta'u pe 'eni 'e fiha, kuo u pehe ke tuku ā mu'a e kai e lole mo e me'a mēlie.*

English *It has been 15 years of being diabetic, will be 16 this year. Once I found out that I got diabetes, I was conscious with my food intake. I am more conscious now. As in those days, I had diabetes, but I took it lightly. Being diabetic but I still ate a lot. I kind of took it for granted. I liked raw mussels, but it has a sea-salty taste. Whenever I had raw mussels, I also got a chocolate bar to sweeten the taste. Consequently, in recent years, I decided to stop eating sweets and sugary food.*

Tupouta'anea shared those sweets and sugary food could raise her blood sugar level, which is not good for diabetes control. She described the journey she has been on related to changing her diet. In the early years of having diabetes, she did not take the need to change seriously. 'What she liked' was more important than 'what was good for her'. She had habits that were hard to shake, like relishing the saltiness of mussels with the sweetness of chocolate. Such experiences were too good to give up. However, as her diabetes progressed it seems she recognised the need to take her diet more seriously.

Perhaps the shock of being diagnosed with T2DM began to make Tupouta'anea realise that she was in a state of danger. She must have been scared and worried about her diabetes, hence the initial consciousness about her food intake. However, low diabetes knowledge is likely to impact individual perceptions and, consequently, behavioural changes (Matoto et al., 2014; Simmons et al., 1994; Widayanti et al., 2020). As Tupouta'anea had lived with diabetes for over 10 years, she developed personal beliefs about her condition that guided the ways in which she managed her diabetes. Maybe her diabetes was getting worse, and she realised that she needed to seriously make dietary changes. Giving up sweets and sugary food would help to lower her blood sugar level. Perhaps Tupouta'anea interpretation that too much sugar in the blood makes the blood "sweet" (sweet blood) (Churchward, 1959, p. 436). Maybe she thinks that to balance or dilute sweet blood, one should use seawater, salt, or sea-salty food like mussels. Vice versa, sweet drinks and sugary food would offset salty blood. Tupouta'anea always asked for chocolate to sweeten the sea-salty taste of mussels.

Tupouta'anea decided to avoid sweets and sugary food, as a strategy to improve her diabetes control.

Tupouta'anea *'Oku fa'a tala ke kumi mai ha'aku pā lole, 'oku 'i ai e 'alamoni. Ka 'e lava pe 'o 'omai e roast almond ka e tuku e sokoleti ia. 'Oku 'omai ki ha taimi te u fiekaia ai, he po'uli pe ko e vaha'a taimi kai. Ko e 'ai ke u ongo'i 'oku ou fiemaie pē. Hangē ko 'eku lau, 'oku ou tokanga ange ki he'eku kai he taimi ni. Feinga ke tuku e kai me'a melie.*

English *I used to ask for almond chocolate bars. However, I can get roast almond without the chocolate. It is for whenever I am hungry at night-time or snack between main meals. It helps satisfy hunger. As I said, I am more careful with my food intake. Trying to avoid eating the sweets*

Tupouta'anea changed from almond chocolate bars to a healthier option, almonds without chocolate. It is just the chocolate that used to surround them that she needs to stop eating. She is realistic, knowing she will get hungry between meals. Thus, it is important for her to have something 'safe' to snack on. Tupouta'anea probably struggled to change a lifetime's food habit of eating sweets and sugary food, but she is determined to improve her diabetes control. Maybe Tupouta'anea can see the connection between sugar in food and sugar in her blood. She has become more careful and more conscious of the need to watch what she eats. Tupouta'anea is likely pleased with herself for making changes in her diet and avoiding favourite foods.

Tupouta'anea took many years to make dietary changes to improve her diabetes control. Perhaps Tupouta'anea did not fully understand what is required with diabetes management. Health and nutrition literacy is a key determinant of food choices, it could be a contributing factor for patient compliance with diabetes management (Nutbeam, 2000; Schmidt-Busby et al., 2019; Wong Soon, 2016). Tupouta'anea did not seem to understand the seriousness of diabetes to make immediate dietary changes as she rather enjoyed her food. Furthermore, social cultural factors like diabetes knowledge and being Tongan influenced Tupouta'anea food practices and diabetes self-management (Akbar, 2019a)

Salome

Salome learnt how sweets and sugary food could worsen her diabetes control.

Salome *Na'e 'ikai ke fu'u mahino ia kiate au pe ko e ha 'a e Suka? Ka ko hono ma'u au 'e he suka pea toki mahu'ingamālie leva kiate au. 'Oku ai e me'akai te u kai pea lele ki 'olunga hoku suka. Hangē ko e ngaahi me'akai melie, ko e pai fainā, keke mo e 'aisi kilimi. 'Oku ou 'ilo'i ko 'eku kai pe ia, 'oku uesia hoku suka. Kuo lele e suka ia ki 'olunga.*

English *I did not really understand what diabetes is? Once I was diagnosed to be diabetic, then it made sense to me. There are foods that will raise my blood sugar level. The sweets and sugary food like pineapple pies, cakes, and ice-cream. I know that whenever I eat these foods, they influenced my diabetes. My blood sugar level would be higher.*

Even though Salome worked in health and most likely with diabetes services for Pacific peoples, she did not fully understand the impact of food on blood sugar level. It is important to understand types of food that could influence blood glucose control (Baumhofer et al., 2020; Moata'ane et al., 1996; Schorling et al., 2000). Like Tupouta'anea, a diabetes knowledge deficit would affect self-management and compliance with diabetes treatment. Salome developed personal beliefs about her diabetes condition that guided her food choices. She learnt that food such as baked products and ice-cream are most likely to be high in sugar. Salome would rather have better glycaemic control than high blood sugar level, which could worsen her glycaemic control.

<u>High fat and fatty food</u>

In addition to the participants' stories about a high intake of sweets and sugary food, they believed that high fat intake is also associated with high blood glucose among Tongans with diabetes.

Kotoni

Kotoni also believes that diabetes is caused by high fat intake and fatty food.

Kotoni *'Oku ou 'ilo na'e ma'u au 'e he suka he potu siasi na'a ku ngāue ai. Ko e fa'a tuku mai 'emau faikava, ka e loulou 'emau ngaahi fu'u 'ulu'i puaka. 'Oku ou tukuaki'i ko e kamata mei ai 'eku suka. 'Oku ou tukuaki'i pe e kai 'ulu'i puaka. Na'e 'osi nofo pe ia hoku fo'i u'a e fa'ahinga kai ko ia, ke kai pe ha fo'i me'i ngako*

English *I am sure I got diabetes while I was working at one of the churches. At the end of our kava session, roasted pig heads, cooked in low heat were served. I believed that was how I got diabetes. I blamed eating pig head. I already developed the senses for that taste, a desired to eat the fatty part.*

Kotoni can relate his food intake with getting diabetes. He believes that pig head, as a fatty food, contributed to his diabetes. It was a habit at church and in the Tongan community of serving fatty food like pig head, a habit that was hard to shake, like relishing the taste of kava with the fatty pig head. Perhaps, with Kotoni being part of the church community group, he experienced social pressure with everyone eating ‘ulu’i puaka (pig head) as part of the hospitality. As a church minister, he would be expected to be part of the kava ceremony (Fehoko, 2014; Tu'itahi, 2005). Perhaps also, with Kotoni being part of Tongan church community groups, he was obligated to dine with other church members and tauhi vā, maintaining his relationships with others in the church kava ceremony. Possibly, he was not aware of or concerned about his food practices in relation to developing diabetes.

Being diabetic, Kotoni has made changes to his food practices. He is no longer eating ‘ulu’i puaka as he got sick even looking at it.

Kotoni *Ko e taimi ni, ko ‘eku sio ki he ‘ulu’i puaka hangē ko ē ‘oku ou toka kovi. ‘Oku ou toka kovi, ‘oku te’eki ke u ala au ki ai. ‘Oku ou ongo’i, ‘oku ou fiefia he a’u ki he fo’i tu’unga ko ia. ‘Oua pe te u to e kai ‘ulu’ipuaka. Ko e me’a ia ‘e taha na’a ku hanga ‘o feinga’i ke tuku koe’uhi ko ‘eku suka.*

English *Now, I feel sick by seeing pig head. I feel awful by just looking at it, without even touching it. I am so glad that I got to that state. I do not eat any more pig head. This is one of the changes that I made because of my diabetes.*

Kotoni is relieved that he is confident that he can avoid eating pig head. As he shared above, he knew the acquired taste of fatty food, but now has developed a new habit. His sense of taste cannot tolerate pig head, and his body is telling him to stop eating such food. Being diabetic has encouraged Kotoni to make hard decisions with his food choices. He identified fatty pig head would not improve his diabetes. Therefore, it was best to avoid it. The sight of pig head made him sick, which helped with his food choices. He now has a commitment to improve his diabetes and he feels good about his decision to avoid food high in fats and probably have fish instead. This is supported by Rice Bradley (2018) reviewed of prospective cohort studies and dietary interventions to determine if there are benefits to fat consumption on diabetes risk. The study found consumption of some dietary fat especially fish may be associated with the reduced risk

of developing T2DM. Furthermore, Charlton et al. (2016) systematically reviewed literature found that fish consumption benefits diets and health of Pacific people as they struggled with nutrition transition, an increase demand for Western food.

Taniela

Taniela believes that eating high fat food like butter contributed to his diabetes.

Taniela *Ko e taimi foki ko ee, kimu'a he 'eku suka, na'a ku kai 'e au konga toast 'e valu (8), mā hinehina. Ko hono tunu'i fo'i fā (4) pea vali'i, to e tunu e fo'i fā (4) 'o vali'i. Ko e ifo atu foki e vali pata he 'ene kei vela.*

Ko e kai pongipongi he taimi ni, ko e ki'i konga toast mā brown 'e taha (1) pē ua (2). Ta 'oku lava pe, 'otometiki pe holo e kai pata, he holo e kai toast.

English *Prior to getting diabetes, I used to eat eight (8) pieces of white toast. I toasted 4 pieces of bread and added butter, and another 4 toasts with butter. Very nice and tasty butter on hot toast.*

My breakfast now, it is only one (1) or two (2) pieces of brown bread toasts. It can be done; I automatically eat less butter when I have less bread.

Taniela described his breakfast habits of eating white bread with butter. Bread, cereals, white flour, and butter were amongst the varieties of food introduced to Tonga by Europeans in the early 19th century (Gosling et al., 2015; Pollock, 1992). Bread and butter became a popular and more convenient breakfast choices for Tongans. There is no doubt that these foods are readily available and more affordable in New Zealand compared to Tonga. Taniela probably enjoyed the familiar breakfast choice that he grew up with in Tonga. He would be grateful for having access to a toaster, as he found toasted white bread to be more delicious, especially hot toast softened with butter. Taniela enjoyed the toasted bread, but he now realises that eight pieces of bread are too much for breakfast. He was pleased that he could change to a healthier option. The wholegrain bread (classified as brown bread by Tongans) has more dietary fibre content and is more filling. This is a better breakfast choice for people with T2DM (Reynolds et

al., 2020). Therefore, Taniela could eat less bread and less fat intake as well. Taniela made sense of his own diabetes control in the context of his eating habits.

Participants' relationships with food involve upbringing, feelings, eating habits and personal food preferences ('Ahio, 2011; Pollock, 1989). They are exposed to many tasty and convenient foods that can have hidden fats, salt, and sugar.

Summary

All participants' stories reflected on their personal food choices and what might have caused their diabetes. Food tastes and flavours link food habits and dietary patterns to the risk of developing T2DM. All five participants' stories revealed how Western dietary patterns of high sugar, high fat, and refined carbohydrate intake, and processed and fried food, were associated with an increased risk of T2DM and affected their diabetes management. People with T2DM often have difficulty in understanding the connection between food choices and T2DM treatment and prevention measures (Evans et al., 2001; Faletau et al., 2020; Hemphill et al., 2012). Even for well-informed participants, their knowledge about lifestyle changes with food practices did not motivate them to prevent or delay developing T2DM. Choosing unhealthy options was too easy, and participants realised they need to find ways to resist the food environmental pressure (Greener, 2019).

Since T2DM is a long-term condition, participants took many years to make dietary changes to improve their diabetes control. All participants' food practices favoured tasty food liked bread and butter, sweets and sugary food, high fat takeaways and junk food. There is evidence that many people have difficulty in modifying dietary habits to reduce the risk of developing and managing diabetes (Mohamed et al., 2019; Schmidt-Busby et al., 2019). While it is argued that health and nutrition literacy is a key determinant of patient compliance with diabetes management (Butcher et al., 2020; Li et al., 2019; Nutbeam, 2000; Wong Soon, 2016), it seems that even when participants in this study did have an understanding, they still struggled to put into practice the complexity of diabetes management and food practices. In addition, social-cultural factors like ethnicity and level of diabetes knowledge also influenced diabetes management (Akbar, 2019b).

The following sections present participants' stories about the changes that happened to them as individuals after they found out they had diabetes.

Tauhi hoku suka – Diabetes personal/self-management

Introduction

All participants have had diabetes for over 10 years. Listening to participants' stories revealed the types of changes that have happened with their personal food practices, level of understanding and commitment to diabetes treatment. Participants talked of how they struggled to make dietary and lifestyle changes throughout the course of their diabetes. Furthermore, they also suggested what they would like to change for Tongan people with diabetes.

The following sections draw out the main factors that matter in diabetes management and food practices, as revealed by the participants' stories.

Dietary changes

An understanding of individual dietary management and food choices can help clarify how a Tongan with diabetes reacts when receiving or being served with food. Participants talanoa (talked) of what types of dietary changes and how they struggled to make lifestyle changes throughout the course of their diabetes.

Amount of food

Participant's dietary changes include cutting down on the amount of food intake.

Kotoni

Kotoni has made some major dietary changes.

> *Kotoni* *'Oku ou feinga pē ke holoki 'eku kai. 'Oku ou feinga ke lahi ange 'eku kai ika mo e me'a tahi, hangē kapau 'e tu'o tolu he uike. Kapau te mau kai ika he 'aho ni, māsolo 'apongipoingi, kai moa he 'aho ko ē pea kiki kehe he 'aho hoko mai, 'o pehepehee ai pe.*

English *I tried to cut down on the amount of food. I tried to eat more fish and seafood, like in three days a week. We could have fish today, mussels on the next day, then chicken, and a different dish on the following day and so forth.*

Kotoni shared changes he has made to his food intake. His dietary changes included cutting down the amount of food he eats, having healthier food choices, especially seafood, fish, and chicken. Kotoni has a meal plan for the week that includes a variety of protein foods which are low in fat and salt. He believes that good food choices improve his diabetes control.

Mele

Mele made dietary changes and has reduced her food portion.

Mele *Ko hono mo'oni, na'a ku 'ilo'i pe 'e au ko e suka 'oku fekau'aki lahi mo e to'onga mo'ui. Pea tautautefito ki he me'akai, pea mo 'ete active pe 'ikai. Kimu'a 'eku suka, na'e 'ikai ke u tokanga au ki he fa'ahinga lifestyle ko ia. Na'a ku kai pe 'e au e me'a na'a ku fie kai, me'a ko ee te u fiu ai. Ko e 'ilo pe hoku suka, I have struggled with my behaviour, to change my food intake. I did not have to stop any food because I got diabetes. It was not meant to stop any food at all but to eat less. 'Io, there is a lot of difference as I made a lot of changes but not dramatic enough.*

English *As a matter of fact, I knew that diabetes is related to lifestyle. It would be, especially with food and whether you are active or not. Before I got diabetes, I did not care about that lifestyle. I ate whatever I want, what satisfy me. Ever since I got diabetes, I have struggled with my behaviour, to change my food intake. I did not have to stop any food because I got diabetes. It was not meant to stop any food at all but to eat less. So yes, there is a lot of difference as I made a lot of changes but not dramatic enough.*

Mele knows that diabetes is lifestyle-related, especially with regards to food intake and physical activity level. Even as a health professional, her knowledge did not change how she lived her life as she did not expect that she would get diabetes. Mele knew what was good for diabetics to eat, what exercise she needed to do, but she was comfortable with her daily routine. Being in denial with a higher risk of diabetes diagnosis, Mele wished to continue enjoying life without compromising and worrying about her circumstances.

She believed that food is to be enjoyed, eating is for comfort so she can entertain herself with food. She lived her life as if she had never got diabetes. Mele knew that she could not continue with her lifestyle, especially now she has diabetes. She struggled with making changes, but she compromised and cut down on the amount of food. Being diabetic meant that Mele needed to make some changes. It was her way of thinking that drives her behaviour, her attitude that "this won't happen to me" in terms of developing diabetes. Swarna Nantha et al. (2019) highlight the importance of having a positive or negative mindset in relation to self-management of diabetes Furthermore, as a Tongan, perhaps Mele need to accept into her loto (heart) that she got diabetes, and that she needed to change in relation to food and lifestyle. Once the heart accepted then 'ilo (knowledge) will be transformed into action.

Taniela

Taniela has made some dietary changes too.

Taniela *'Oku ai pe fa'ahinga me'akai 'oku 'ikai ke u to e kai 'e au. 'Oku 'ikai ke u to e kai kapohaituleiti, hangē ko e me'akai foha, ko e 'ufi, manioke mo e ngaahi me'akai sitaasi. 'Oku tātāitaha ke u to e kai he taimi ni. Mahalo ka toki tu'o taha ha uike 'e ua pea ko e ki'i konga me'akai si'isi'i pe.*

English *There is some food that I must avoid eating. I am no longer eating carbohydrates, the root crops like yams, cassava, and those starch foods. I rarely eat it now. It could be once a fortnight and in a very small portion.*

Taniela made similar dietary changes to Kotoni and Mele. He has cut down on the amount of food, especially carbohydrate food. He has also cut down on Tongan staple food (root crops), to control his carbohydrate intake. Taniela has probably learnt in his diabetic life course that carbohydrate food is important for diabetes control. He has already cut down or avoided certain types of food like Tongan staple foods. Taniela is conscious of his food choices and watches his carbohydrate food intake.

Salome

Like Taniela, Salome has also cut down on the amount of Tongan staple food.

Salome	*Na'a ku toki 'ilo mei he ako mo e dietitian, 'oku ai e fa'ahinga me'akai 'oku sai ki hoku suka. 'Oku ai fa'ahinga me'akai, mo e lahi 'o e me'akai oku ngofua ke te kai. 'Oku 'i ai e me'akai ke kai fakafuofua, me'akai ke fakasi'isi'i mo e me'akai ke 'oua 'e kai. 'Oku ai e me'akai ke te kai fa'iteliha, he 'ikai ke ne uesia 'e ia hoku suka*
English	*I have learned from the dietitian education session, there are certain type of food to improve my blood sugar. There are certain types and amount of food allowed. There would be some food to eat in moderation, eat less or food that should be avoided. There would be free food, as they would not have any impact (a minor effect) on blood sugar level.*

Salome shared that she is now aware of what she can eat and what she needs to avoid or limit. She was happy to gain this knowledge and appreciate the dietitian education session, it made a lot of difference for her diabetes control. Salome possibly wished that she gained this new knowledge earlier especially when diagnosed. She would have been more careful with her diabetes management and food practices. Salome is mindful of having to use what she has learnt about food for diabetes and practice it with her diabetes management. She knows that one of the issues that affects choosing appropriate food for diabetes is taste and flavour. She believes that a lot of Tongans will choose to eat what tastes nice and what they acquire a taste for, rather than what is good for diabetes control. This is similar to what Kotoni and Mele shared in the previous section. Perhaps, appropriate, and meaningful nutrition education information aims to reach Tongan's heart, are more likely to influence food practices and improve diabetes management.

<u>Salt and fat intake</u>

Kotoni had made some major dietary changes. Being diabetic means that he tried to avoid eating high fat and salty food.

Kotoni

Kotoni *Ko ‘eku me’a ‘oku fai, ko e feinga ke tauhi e kai mo ‘eku feinga ke tuku e kai me’a ngako. Kapau ko e fiema’u ke kai kapapulu, ‘oku ‘ai ‘o ua’aki ha temata. Ko e feinga pe ke ki’i to’o e ngako ‘Oku fakasi’isi’I mo e kai me’a konokona.*

English *I tried to control my food intake and stop eating fatty food. If I want to eat corned beef, I will cook it with tomatoes. I tried to remove the fat. I have cut down on eating salty food.*

Kotoni shared how much he wants to improve his food intake. He has a strategy in place in which he avoids and/or minimises eating foods that are high in fat and salt. He realises that adding vegetables to corned beef is a healthier option for him. Kotoni most probably drained off fat from corned beef, which can lower his fat intake. He believes that fat and salt can be avoided, food that he used to enjoy which contributed to his diabetes diagnosis.

Fluid intake – Water

Participants recognised the importance of drinking water as part of diabetes management.

Mele

Mele’s dietary changes include drinking plenty of water.

Mele *Na’e ‘ikai ke u inu vai au. He’ikai te u lava ‘e au ‘o inu e vai kea ‘oua pe kuo u fu’u fieinua ‘aupito. Ka ko e taimi ni ia, ‘oku ou sai’ia ‘aupito he vai. ‘Oku ifo ‘aupito. Ko e taha ia e liliu ‘oku ou lava’i, ‘oku tōtō atu ia.*

English *I did not drink water. I could not drink water except if I was very thirsty. However, now I can drink water. I really like it. It is very nice. That is one of the changes that I have made, absolutely!*

Mele was not used to drinking water, but now she enjoys water. Being diabetic means that Mele needed to make some changes in her behaviour in relation to food, drink, and lifestyle.

Taniela

Taniela’s strategies for change include promoting drinking water at church.

Taniela *Ko e taha ia ‘a e me’a ‘oku feinga’i ke lava ‘i he siasi. ‘Oku faka’ai’ai ‘a e vai kae ‘oua e ‘omai ‘a e soda pe ko e inu kasa. Ka ‘oku ki’i fepaki pe foki koe ‘uhi ko ‘ene ma’ama’a he fale koloa. ‘Oku nau fiema’u pe ‘e nautolu ke fakatau mai foki. ‘Oku ‘alu pe taimi mo e lahi ange ‘a e inu vai. ‘Oku kamata ke normal ‘ene ‘asi. ‘Oku te’eki ke a’u ki he tu’unga na’a mau ‘i ai mautolu he vahenga na’a ku ‘i ai. Na’e tapu’i pea ‘ikai ke to e ‘i ai ha me’a ia.*

English *That is what we are trying to be able to do at the church. We promote water instead of soda or fizzy drinks. It is a challenge as these are cheaper in the shop. People prefer to buy fizzy drinks. Over time, there is an increase in drinking water. It is starting to become normal habit. We have not reached the standard that we set in the other region. It was banned and fizzy drinks were not allowed.*

Living with T2DM, Taniela understands the danger of soft drinks and imposed his personal dietary changes at his church. He knows that, in terms of cost, soft drinks are cheaper than water and therefore people will opt for cheaper options. Taniela is using his experience from another church to encourage church members that it can be done. He promotes drinking water and would like church members to embrace the idea. Maybe this is a new congregation for Taniela, and he wishes to slowly introduce healthy eating while he builds his relationships with church members. He may also want to learn about the church’s position in terms of healthy lifestyle. Being Tongan and a church leader, Taniela could be mindful of the Tongan cultural approach, in which food is something to enjoy. He has heard some church members repeat a common Tongan saying: “Tau kai pe kitautolu koe’uhi ko e mo’ui ‘oku tu’otaha pe” (“We shall eat whatever as we only live once”). Taniela is wise, and instead of putting a nutrition policy in place and banning fizzy drinks at church, his best interest is to win people’s loto (hearts) in accepting healthy changes. He has probably learnt that, as a leader, he needed to walk the talk and demonstrate drinking water, showing his actions support his personal health beliefs. In addition, being a church minister, his pastoral care includes a holistic approach for the wellbeing of mind, body, and soul. Taniela wishes to create a supportive environment and make the healthy option of drinking water an easy option for church functions. It is interesting to reflect on the mindset that drinking water must be bought rather than taken from the tap. Maybe this is about Tongan people’s

history of living in contexts where tap water was not safe to drink, which raises questions about how they could be convinced that Auckland tap water is safe to drink.

Tupouta'anea

Tupouta'anea, as a church minister, struggled with no water being served at church functions.

> *Tupouta'anea* *'Oku ou talaange kia Pita, 'oku totonu ke u to'o 'eku hina vai 'i ha'ama ō ki ha me'a. Sometimes ko e me'a pe 'oku nau 'omai, ko e me'a melie. Ka ko e taimi ni, kuo poto e Siasi ia, because I always asked, "Do you have any water?". 'Oku ou fiema'u vai pe au. They do not provide it until I ask for it.*
>
> *English* *I have told Pita that I should bring my drinking bottle of water whenever we attended any event. Sometimes they only serve sweets and sugary beverages. At this stage, the church members are wiser because I always ask, "Do you have any water?". I only want water. They do not provide it until I ask for it.*

Tupouta'anea, like Taniela, as a church minister, wants to promote drinking water and make it readily available at church functions, probably in their commitment to ensuring church members are supported with healthy choices. As mentioned in previous sections, Tupouta'anea already made personal dietary changes and gave up sweet and sugary drinks for water, a healthier option. Initially, she struggled with sweet and sugary drinks served at church functions. With respect, Tupouta'anea now expresses her personal preference for water. This is a strong health message to the church community. As a church minister, she is well respected and wishes to maintain a good relationship with the church. Initially, she probably needed to explain and share her personal decision with the church. Since they have learnt that Tupouta'anea only drinks water, maybe she wants to set a standard for the church. She probably would like water readily available and be the first choice of drinks for people with T2DM and their families. Like Taniela, it is in her duty of care and pastoral role that she demonstrates a healthy lifestyle and creates a supportive environment.

Summary

Having T2DM meant that all participants became conscious about their food intake. They did not initially know or fully understand the relationship between food intake,

lifestyle and high blood sugar or diabetes. Participants struggled with making choices when they were first diagnosed with diabetes. Through education sessions, personal experiences and learning about food and diabetes, they have made dietary changes over the years. Some changes were harder than other dietary changes. However, the knowledge gained has encouraged them to make key changes to help with diabetes control. It depends on an individual's willpower to choose what is good for his or her diabetes. Beginning to better understand the risk of rising blood sugar levels seems to have become a key motivator for change.

In New Zealand, diabetes management is provided at primary healthcare as part of long-term conditions management. A structured care that expected each individual to be responsible for their own food choices as in Self-Management Diabetes programme (McCay et al., 2019; Miller, 2016; Ministry of Health, 2016c). However, for a Tongan with diabetes, perhaps food choices depend on a level of understanding and knowledge about the connection between food and diabetes (or blood sugar). Loto (heart) accepted the dietary management plan would empower an individual motivation and competency with making the dietary changes and/or adhering with the recommended dietary plan provided. Further, the choice of food is very often in the hands of the family and community where the food is eaten (McElfish et al., 2015).

The following section draws on participants' lived experiences of what it is like being diabetic in a Tongan family.

Suka 'i he fāmili – Being diabetic in the family

Introduction

The participants' stories reveal what it is like being diabetic in the Tongan family. Through listening to the stories, I have sought to open a space where a richer understanding in relation to food choices can be explored.

In this study, family is referred to as a group of people living together in a household. It is often connected with the blood bond consisting of parents and children, in-laws, grandparents, or close relatives. The person with diabetes lives, eats, and shares meals with his or her family. The awareness of the family dynamic and the cultural impact of 'who we are as Tongans', and what Tongans choose to eat, is important to bring meaningful understanding toward what is important for a Tongan with T2DM.

In New Zealand and Western countries, a person with T2DM is often seen for diabetes dietary education and management plan as an individual (Gamble et al., 2017; Miller, 2016; Parry Strong et al., 2014; Swarna Nantha et al., 2019). For Tongans and Pacific people with T2DM, what is neglected is the consideration of family background, household dynamic and community involvement (Gauld, 2016). Participants' stories revealed food choices are determined by various factors including family food preferences and food availability, who makes the decision about what to buy, what to prepare, who prepares and cooks food, cooking skills and cooking methods, what to eat at what time, and what matters when food is served for the person in the family with diabetes. The food choices of one person within the family is under a complex set of influences. This is the root of the difficulty.

The following sections draw out the main factors that determine participants' food practices within the context of being diabetic in the family, as revealed by their stories.

Spouse's food preference

What sounds good 'in theory' is challenging to maintain in practice. Salome's food choices are affected by her husband's food preferences.

Salome

Salome *Ko e fo'i 'ilo fo'ou na'a ku ma'u mei he ako mo e Dietitian. 'Oku ou feinga leva ke u kai e me'akai hange ko e siaine. 'Oku faingata'a pe, he 'oku 'ikai ke manako hoku hoa 'o'oku ki he kai siaine.'Oku 'ikai ke tokoni ia ki he'eku kai. Ko ia foki 'oku ne fai 'emau shopping. 'Oku ou kai pe me'akai 'oku 'omai ma'a e famili. Ko e 'omai e siaine ke 'ai ete ki'i haka tokotaha pe 'a kita, 'oku faingata'a pea ta'eoli. 'A ia ko e me'a pe 'oku fai, ko e feinga ke fakasi'isi'i 'eku kai, mei he tokotaha kotoa pe 'i he famili. 'E lava ai pe ke mau kai e me'akai tatau pe.*

English *I learnt a new knowledge from the nutrition training with the Dietitian. I tried to eat food like banana. It is somewhat hard, as my husband does not like banana. This does not help with my food intake. He does our shopping. I eat what he bought for the family. It is hard and distaste to cook banana just for myself. Therefore, I tend to eat whatever food the rest of the family eat, but in a smaller portion. In that way, we can all eat the same type of food.*

Salome prefers to eat cooked banana as she learnt that it is a good carbohydrate for a diabetic. Her husband does not like banana, and he is most likely to make the decision about what to buy for the family. Being diabetic in the family could cause a social disconnect within the communal family meal. Salome is the only one who needs to eat what is good for a diabetic. It is hard to watch the rest of the family enjoy other food. Salome's food choices are limited by what her husband prefers to eat. However, the Tongan staple foods are good sources of carbohydrate but need to be under good portion control. It is good that Salome can enjoy the same meal and food choices with her family, but she needs take control of the amount of food, and what is the right amount for her diabetes control. It seems that control does not just reside in who controls the kitchen, but who does the shopping. This is aligned with Dao et al's (2019) exploratory study investigating factors that influence self-management of T2DM in general practice in Sydney, They conducted semi-structured qualitative interviewed with ten (10) patients with T2DM and their service providers , four GPs and three Practice Nurses. This study reported that family and friends could be barrier to diabetes self-management. Some patients reported that their partner's offer them unhealthy foods or ate unhealthy meals in front of them.

Taniela

On the other hands, unlike Salome, Taniela's wife is supportive of his food choices.

Taniela	*'Oku 'ikai ha me'akai makehe ia. Ko hoku hoa, 'oku ne fakapapau'i 'oku 'i ai 'ema vesitapolo pea ngaahi mo 'ema juice ke ma inu.*
English	*There is no special meal. My wife (partner) always makes sure that we have our vegetables and prepare our juice for our drinks.*

Taniela is confident that there is no need for special diabetic food for his diabetes management. He knows that vegetables are good for his diabetes. He is grateful that his wife is supportive and being creative with making vegetable drinks. Perhaps both Taniela and his wife knew about essential nutrients in fruits and vegetables as good sources of vitamins and minerals (Mann & Truswell, 2017). Taniela is strong enough to take control of his food intake and appreciates his wife supports. Food practices are easier when they

both drink the vegetable juices. Taniela has the self-efficacy that enables him to keep control.

Food availability

Participants' stories revealed that food practices are determined by what is available at home, who does the shopping, who decides what to buy, and what to prepare for the family member with diabetes.

<u>Food shopping – Who buys the food</u>

Salome

Salome went on to explain:

Salome *Ko e faingata'a e tauhi he taimi 'e ni'ihi, ko e 'ikai ke poupou mai hoku hoa. Hange ko 'eni, kapau ko hoku vaivai'anga ko e 'aisikilimi. Kuo u kole ki ai ke 'oua 'e to e fakatau mai e aisikilimi ki 'api. Ka koe 'uhinga foki 'oku fie kai 'asikilimi ia. 'Oku 'ikai ke fie fanongo mai ia ki au, 'a ia te ne fakatau pea ha'u mo ia ki 'api. Pea te ne to e hanga pe 'o talamai pe te u fie kai 'aisikilimi. Neongo kuo u 'osi kole ange ki ai, kae talamai, ki'i tu'o taha pe. Ko e 'osi pe fo'i tu'o taha ko 'eni, kuo fe'unga.*

Ko e ngaahi me'a ia 'oku 'ikai ke lava 'o tokoni, ke poupou mai. 'Oku tonu ke 'oua te ne to e 'omai e 'aisikilimi ki 'api. Koe 'uhi ko e taimi 'e ni'ihi 'oku tau tō pe he vaivai'anga. Kapau te ta'utu, 'e kai aiskilimi kotoa 'a e famili ka te ta'uta'utu. Pea ko e taimi 'e ni'ihi, 'oku te fa'a tō pe, pea tala ange ke 'omai, kae 'omai fakafuofua pē. Ka 'oku tau 'ilo, taimi ni'ihi ko 'etau ala pe 'o kai, 'e faingata'a hono to e fakafuofua

English *I struggle to control my diabetes at home as my husband is not supportive. For example, ice cream is one of the foods that I need to avoid/limit. I have already asked my husband to not bring any ice cream home. He likes ice cream, and he does not listen to me, so he usually brought ice-cream home. He would then ask me whether I would like to have some ice cream. Even when I refused, he kept saying to me "Just one last time, one bite and you will be fine".*

That is a challenge at home, with lack of support, especially my husband. He should not bring ice cream home. I was tempted and tended to lose control over ice cream. Everyone would have ice cream while I sat and watched them eating. I usually could not avoid it and then asked for some ice cream. I usually asked for a little bit but, as you know, once I started eating ice cream, it is very hard to stop and ended up with extra portions.

Salome is aware of the need to avoid high fat and high sugar food. Her husband plays an important role in purchasing what food is available at home. He is aware that Salome is avoiding ice-cream as it is not good for her diabetes. Salome has asked that he not bring ice cream, yet he still brings it home and persuades Salome to share the treat. He likes ice cream and imposes his food preference on Salome. Perhaps he recognises that Salome still enjoys the ice cream and wants to go on giving her what he knows she likes. Salome tends to fall into the temptation of ice cream and finds it hard to limit how much she eats once she takes the first mouthful. Thus, for Salome, controlling her food intake is an ongoing battle. She knows that her husband loto (heart) does not accept her story as he does not listen to her talanoa (story). Being diabetic in the family means that what she wants to avoid at home is not within her control because others bring in food that tempts her.

Mele

Mele also struggled with food available at home and who does the shopping.

Mele *The challenge ia ki homau ‘api. For example, na’a ku kole ange ki homau ‘api ke ‘oua te nau fakatau cheese mo e siamu because kapau te u kai au ha konga mā on its own, konga mā pe ua pea fe’unga. Kapau ‘oku ‘i ai ha cheese ia te u lava au ‘o kai e konga mā ‘e 6 mo e thick pieces of cheese pe ko e siamu ee. They think, ‘oku ‘ikai te nau suka nautolu ia. Ko e me’a pe ia ‘a’aku ke ‘oua te u kai e ‘u me’a ko ia. Ka ‘e fakatau mai pe ia.*

English *It is a challenge in my household. For example, I have asked my family to not buy cheese and jam. This is because if I eat bread on its own, then two slices would be enough. But when there is cheese, I could eat 6 slices of bread with thick pieces of cheese or jam. They think, as they do not have diabetes. Therefore, it is up to me to stay away from eating it. They still buy it.*

Mele knows that she struggles to limit her portion of bread if she eats it with cheese or jam. She is aware that she can eat bread, but six slices of bread are too much for her diabetes. Mele likes bread, especially with cheese or jam. She finds it hard that her family cannot support her as they still buy cheese and jam. Mele knows that it is up to her to avoid eating it, but she wishes that they could be more supportive, by not having it in the house. Thus, for Mele, controlling her food intake is harder when the family is not creating a supportive environment. Control involves will power in the face of food that one enjoys. Willpower would be much easier to exercise if the 'loved' food were not in the house.

Taniela

Unlike Mele, Taniela can take control of his food intake.

Taniela *Ko 'api ia 'oku nau 'ilo pe 'oku ou suka ka 'oku 'ikai ke pehē ke nau mamafa mai nautolu ke 'ai mai 'eku me'akai. Pea pehē ke nau tokanga mai. Ko e me'a pe 'oku 'ilo'i, ko kita pe ia ke 'ai e me'akai ke u kai. Ko e taimi ko e 'oku nau 'ai mai ai e me'a tokoni, te u filifili lelei pe e me'a ko ia ke u ma'u.*

'Oku 'ikai ha me'akai makehe ia. Ko au pē 'oku ou 'alu 'o fakatau mai e me'a ko ia 'oku lelei ki hoku suka.

English *At home, they know that I am diabetic but that does not mean for them to prepare my meal. They are not concerned. What is known is that I am to prepare my own food. When they prepare and serve the food, I choose wisely what to eat.*

There is no special meal. I do my own shopping and buy what is good for my diabetes.

Taniela is confident that he watches his food choices, and he does not find it a barrier to his diabetes management. He knows what food is good for his diabetes, and he is in control of what to buy, what to eat and how to prepare his meal. Even if his family serves his meal, he knows what is good for his diabetes. He is strong enough to avoid any unnecessary food prepared by his family. Being diabetic, he knows what is good for his diabetes and takes good control of his food choices. It seems that, in his home, his decisions about what food shall or shall not be eaten are adhered to by other family members. He has the self-efficacy that enables him to keep control.

Food preparation – Who prepares the food

Participants talanoa about food availability is determined by the person who prepares food for the family.

Tupouta'anea

For Tupouta'anea, the person who prepares food in the family is very important in diabetes management:

Tupouta'anea *'Oku mahu'inga 'aupito 'a e tokotaha 'oku ne teuteu 'a e me'akai ki he suka. Ko hoku hoa 'oku ne kuki 'ema me'akai. Kuo u talaange ke 'ai pe ke u kai ika ma'u pe. 'Oku 'osi kole ange pe ki ai, ke 'oua 'e lolo'i e me'akai. Ko u talaange, ke ne kuki his own food 'o lolo'i but not mine. 'Oku mai pe 'o haka 'aki pe ha ki'i mei masima mo e onioni.*

English *The person who prepares food holds a very important role in diabetes management. My husband cooks our food. I have told my husband that I rather eat fish all the time. I have asked him, please do not cook food with coconut cream. He could cook his own food with coconut cream but not mine. I preferred that fish is cooked with salt and onions only.*

Tupouta'anea is aware of the need to avoid high fat food. She asked her husband to not use coconut cream. Her husband plays a very important role in preparing food and it seems also in deciding what food gets eaten. Even though Tupouta'anea has asked many times that he not use coconut cream, and has suggested alternatives (salt and onions), still he serves her fish in coconut cream. Perhaps he recognises that Tupouta'anea still eats and enjoys the fish cooked in coconut cream and wants to go on giving her what he knows she enjoys. Or perhaps he likes his fish cooked that way. Or maybe this is the only cooking method he knows and is competent with; or perhaps he does not wish to make the effort to prepare another meal of fish cooked differently. Perhaps he sees fish cooked in coconut cream as the Tongan way and is keen to retain their Tongan customs. Or is it all of these? Whatever lies behind his persistence, and how ever many times Tupouta'anea tells him not to give her coconut cream, still he maintains the same type of cooking. Thus, for Tupouta'anea, changing her diet to one more appropriate for her diabetes feels like an ongoing battle. In many ways what she eats at home is not within her control.

Salome

Salome also struggled with the way food is prepared at home:

Salome *The challenge at home ko e ngaahi ‘emau me’akai. Kapau te u tuku pe ‘e au ki hoku famili, te nau kuki pe ‘e nautolu ‘a me’a ‘oku nau fie kai. Kapau ko au te u kuki, te u ‘ai leva e me’akai mo’ui lelei. Te u feinga ke ‘ai ha la’i ‘akau, fakasi’isi’i e niu mo e ngaahi me’a pehē. Te u tofitofi iiki e konga me’akai. ‘Oku fiema’u ia ke u ako’i, ke nau sio ki ai, pea ‘ofa pe ke nau muimui ki ai, tautau tefito ke fakasi’isi’i e konga me’akai. Hangē ko ‘eni, ‘osi fe’unga pe fo’i talo ‘e fā. Te u tofitofi ‘a e fo’i talo ‘e taha ke kongakonga iiki ‘e valu. Hangē kapau ko hoku hoa, te ne tofi fā pe ‘e ia e fo’i talo ‘e taha. Ko ia ‘e kai pe ‘e he tokotaha ia ‘a e fo’i talo kakato ‘e taha (me’i talo ‘e 4).*

English *The challenge at home is preparing our food. If I leave it to my family, they will cook whatever they want to eat. If I cook it, I will prepare healthy food. I will try to have green leaves, cut down on coconut cream and so forth. I will slice the Tongan staple food into small pieces, a bite size. I need to demonstrate it, they can observe and, hopefully, they will follow how I prepare food especially with portion control. For example, four taros can feed the whole family. I slice one taro into eight bite size pieces. Unlike my husband, one whole taro is cut into four pieces only. Therefore, one family member eats one whole taro (4 pieces).*

Salome knows what good food choices are for herself as a diabetic. She knows that her family will prepare whatever food they want to eat and not necessarily what is good for her. Therefore, she needs to cook the family meal so that her family can see and learn what a healthy meal with good portion control is for diabetes. It is most likely that her husband will cook too much taro and the family will continue to eat extra carbohydrates, which is not good for people with diabetes. Salome wants to set a good example for her family, as what is good for her diabetes should be good for the rest of the family. She wants to show them how to lower fat intake, include vegetables and eat less carbohydrate-rich food (taro). A healthy meal for diabetes can be achieved by using less coconut cream, adding some vegetables, and having smaller pieces of taro. In doing so, Salome can feed the family with half the amount of taro that her husband usually cooks. Being diabetic in the family, Salome needs to demonstrate healthy cooking, apply

portion control, and take control of the family meal. She needs her family to understand and improve food practices, which is good for everyone in the family, but essential for her diabetes control. She has thus learned that controlling the kitchen for the family is the way to also control her own diabetes diet.

Taniela

However, Taniela has appropriate food served at home.

Taniela *Most of the times, 'oku fa'a teuteu'i hoku hoa 'ema me'akai. It is good he 'oku 'ai 'ema polisi, ka 'oku 'ikai ke u fu'u sai'ia he kai polisi. Taimi 'e ni'ihi, 'oku ne 'ai ha vesitapolo mo ha haka.*

English *Most of the times, my wife will cook/prepare our food. It is good as we have porridge, but I do not really eat porridge. Sometimes she will have some vegetables with some cooked meal (haka).*

Taniela's wife is aware of healthy food choices for diabetics. She makes porridge for breakfast. Even though Taniela does not really like porridge, he knows it is a good food choice to help him with his diabetes. Vegetables and Tongan staple foods are available at home, and both are appropriate and healthy choices for people with diabetes. It is encouraging to see the support that Taniela's wife provides for her husband. She is health conscious and probably wants to be healthy as well. There is a sense that Taniela has a much better chance of controlling his diabetes than the other participants because the person buying and preparing the food has his best 'diabetic' interests at heart.

<u>Cooking skills – who can cook</u>

Participant's talanoa that the person who does the cooking also determined what types of food and the amount food available for at home. Homemade meals depend on the cooking skills of family members.

Tupouta'anea

Tupouta'anea is in a situation where both she and her husband have T2DM:

Tupouta'anea *'Oku sitepu ini hoku hoa 'e ngaahi 'ema me'akai, koe'uhi ko 'eku femo'uekina he ngāue. 'Oku ai foki e taimi ia, kuo hē ia, kuo siki ia he kuki he taimi kotoa pē. 'Oku ou fa'a talaange foki ki ai "You are just killing us". I kept telling him that he is killing us with his food choices mo e fa'ahinga kuki. Kapau te u kole ange ke 'ai ha'ama supo. Ko 'ene tau pe 'a'ana 'o 'ai mai ha kelevi kapapulu. Ko u tala ange ki ai "'Oku fiema'u ia ke 'ai ho u'a ke tatau mo hoku u'a. 'Oku totonu ke ta u'a ki he me'a 'oku sai ki he suka". He needs to be careful as he is also diabetic. 'Oku mahu'inga 'aupito e cooking skills, especially 'a e tokotaha 'oku teuteu e me'akai. 'Oku ou 'ilo pe 'a e me'a 'oku sai ki au. Sometimes, 'oku ou 'ai pe 'e au 'eku me'akai. 'Oku feinga pe ka 'oku tonu ke 'alu ia ki ha cooking class ki he kau suka.*

English *My husband stepped in and took responsibility with food preparation because of my busy work scheduled. There is time that my husband got lost as he got sick of cooking all the time. I often said to him "You are just killing us". I kept telling him that he is killing us with his food choices and types of cooking. When I asked my husband to make us a soup. He made gravy with corned beef. I have told him that "You need to have the same sense of taste as mine. We should both have preference for diabetic food flavours/sense of taste". He needs to be careful as he is also diabetic. The cooking skills is very important especially for the one who prepare the food. I know what is good for me. Sometimes, I made my own food. He can prepare what he would like to eat as I can do my own food. He tried but I think it will be useful if he attends a cooking class for diabetes.*

Tupouta'anea acknowledged her husband taking up her role in family. Being a Tongan woman and wife, she is responsible for providing, preparing, and cooking food for the family. Being a church minister, Tupouta'anea has a busy schedule with a lot of responsibilities in serving the church. Tupouta'anea's husband stepped into the housewife role. He prepares food according to his likes and food preference. This is very important as his own food choices and preference determine what food is prepared and served for Tupouta'anea. It affects Tupouta'anea's food intake and choices as she is bound to eat what is available and served by her husband. Tupouta'anea is not surprised that her husband got tired of cooking, as it is a lot of work. He could be tired of cooking the same food, as she preferred to eat fish every day. Tupouta'anea reminded her husband that he is also diabetic and therefore should prepare what is good for them both. Unfortunately, her husband's food preference is

a barrier for them instead of helping control their diabetes. Tupouta'anea believes that cooking skills are essential, and her husband needs to attend a cooking class for diabetics. Cooking is something that needs to be learnt, especially what to prepare and how to cook the food that is good for a diabetic. A corned beef soup is prepared like a gravy (thick sauce), a Tongan dish which could be high fat. Tupouta'anea is aware of the need to lower fat intake, but she appreciates and respects her husband serving her with cooked food at home. Tupouta'anea knows what good food for diabetes is, she wishes that her husband chose food that is good for diabetes. She can prepare her own food and she also wants to help her husband as he is also diabetic. Within the family, they can help each other. The challenge is to win her husband loto (heart) and 'atamai (mind), to make wise decision. She wants to help her husband learn to cook and appreciate a different kind of food.

Tupouta'anea holds the tension of the family supporting each other in sharing the cooking, and in her taking personal responsibility for her own diet:

Tupouta'anea *'Oku mahu'inga 'aupito 'a e cooking skill, tautau tefito ki he tokotaha 'oku ne teutue'i e me'akai. 'Oku fa'a 'ita ma'u pe hoku hoa he fānau, as he need help with cooking. 'Oku fiema'u e fanau ke nau tokoni he teuteu'i e me'atokoni 'i 'ap ni. Talaange he'enau dad ke nau omi 'o tokoni ki he 'ai e me'akai ho'omou fa'e. Te ne fai pe 'e ia e haka. Ko 'eku ta'ahine koe ko Seini is the best cook. She roasts pumpkin and other food. Ka ko hono fakakātoa, it depends on me. Neongo 'oku nau prepare this and that, but I can get up and do my own. 'Oku tonu ke u lava pe 'e au 'o teuteu'i 'eku me'akai kae 'oua te u rely on my family.*

English *The cooking skills are very important especially for the one who prepares the food. My husband is always disappointed with the children, as he needs help with cooking. Our children need to help with food preparation at home. Their dad told them that they need to help with preparing their mothers' meal. As he can boil the staple food (haka). My daughter Jane is the best cook. She roasts pumpkin and other food. At the end of the day, it depends on me. Though they prepare this and that, I can get up and do my own. I should be responsible to prepare my own food and should not rely on my family.*

Tupouta'anea admitted that she should cook her own food as she knows what is good for her diabetes but, as mentioned previously, she has a busy schedule. She recognises

she is the one most capable of making her own food, and for her diabetic husband as well. Tupouta'anea's level of understanding and knowledge about food and diabetes is important in ensuring what is available, served and provided at home is appropriate for diabetes. She appreciates that good level of mahino (understanding) and 'ilo (knowledge) about food for diabetes is essential for good diabetes control. She knows that if she took responsibility for preparing her own food, she would likely achieve much better control of her diabetes.

Summary

All participants are part of a family. Food practices are determined by various factors including, but not limited to, who decides what to buy, prepare, cook, and serve on the day. Being Tongan with diabetes means that, as an individual, one struggles with what matters to the family, and this shapes the experiences of Tongans with diabetes. Participants may know what they need to eat but their food choices depend on what is available, what is provided and what the rest of the family are eating.

In the Western world and New Zealand diabetes guidelines, an individual is expected to take control of their own food choices (Ministry of Health, 2015c, 2016c). However, for a Tongan with diabetes based in a family unit, it is a collective effort. Food choices depend on the family's commitment and willingness to accept, compromise, and support the person with diabetes. Even a participant who has a spouse who is also diabetic still struggles to get support with food and dietary management.

Suka 'i he nofo'a-kāinga lotu – Being diabetic in church community

Introduction

All participants in this study are Tongan leaders and Christians who are engaged with church. Christianity and religious beliefs are very strong among Tongans both in Tonga and in New Zealand (Basett & Holt, 2002; Dewes et al., 2013; Fakahau, 2020; Fehoko, 2020). Participants shared the significant role of food, money, and culture in church, which has an impact on their diabetes management and food practices. The data revealed the importance of the Tongan cultural values of tauhi vā (maintaining relationships) and fulfilling fatongia (duty and obligations) related to food provided as

gifts and offerings to God through church feasting, and gifts to church ministers, to guests and to other people in the church.

Ketu'u's (2014) doctoral study discussed the impact of Tongan cultural practices on the economic behaviour of Tongans in Tonga. She recognised the positive and negative impact of gifting in Tongan culture. Food is a major component of church feasts and is provided on special occasions like misinale (annual church donation), fakaafe (church food offerings) and kalasi'aho (small cell and Bible study groups). There are also the family and community ceremonials of fai'aho (birthdays), mali (weddings), putu (funerals) and other occasions. The amount of food and money donated to the church signifies the degree of commitment and the values of biblical faith and being Tongan.

The following sections draw on the participants' stories on the giving and receiving of food within a Tongan church community.

Honouring God

Fakalangilangi 'Otua translate to honouring God. The Tongan community in Auckland is deeply committed to their church. Gifts are provided to fulfil family and church members' fatongia (responsibilities) in honouring God and tauhi vā, maintaining relationships. Gifts include food, money, fine mats, and other koloa fakatonga, Tongan materials.

Tupouta'anea

Tupouta'anea is a minister in a Tongan church and observes the pride in giving food and money during the fundraiser for the church annual donation (misinale).

Tupouta'anea *'Oku fiema'u ke save every penny koe'uhi ko 'emau ngāue fakasiasi. 'Oku te feinga kita, ka koe fai ko é 'emau koniseti, 'oku te fakakaukau ke tuku ā e 'ai me'akai. 'Oku fe'auhi pe kinautolu ia, 'a e ngaahi fu'u laulau alaminiume lalahi. Ko e totofu ko ē 'a e Siasi mo e kau visitor he pō ko ia, ko 'enau fiefia ia, hono 'ai e ngaahi fu'u laulau, 'osi pe ko ia, pea toe li pe mo e pa'anga.*

'Oku hange pe ko 'ete feinga ke lilu e culture. Masi'i 'oku lele pe 'a e kai ia, kae li pe e kilu ia. 'Oku foaki pe pa'anga ia kae kei fai pe mo e 'ai kai. 'A e ngaahi fu'u poulu, kuo 'osi fakakakato ai pe. 'Oku nau fiefia pe kinautolu ke foaki ki he 'Eiki, 'i he'enau tui mo e 'enau falala, 'oku tauhi pe kinautolu 'e he 'Eiki.

English *We need to save every penny because of our church project. I have tried but when we had our concert (fundraiser), I thought to stop providing food. They just compete with providing large aluminum trays. Everyone got a tray, that is both church members and visitors (guests) of that evening. That is what made them happy, providing those trays (food) and still donating money.*

I have tried to change the culture. Man, food is provided as well as hundred thousand dollars put in (donated). The large bowl filled with everything. They are happy to give to God, as they believe with faith, that God takes care of them.

Tupouta'anea tries to discourage her church members from providing food, but she realises she cannot stop them. In this church, church family members are allocated to a kalasi'aho (cell groups). Each kalasi'aho is responsible for fundraising toward the church building project. Tupouta'anea talked about one kalasi'aho concert (fundraiser). Money was collected for the church project and guests, including other church members and visitors who attended, and contributed cash. Traditionally, in return, the host served sumptuous food. The minister wishes that the money spent on food were converted to cash instead. Tupouta'anea wants to put every penny toward the church building project.

However, church members explain that they have already allocated how much they wish to contribute for misinale (annual donation) and the church project:

Tupouta'anea

Tupouta'anea *Ka 'oku talamai 'e nautolu ia, "Faifekau, kapau 'e tuku e kai ia, 'e tatau ai pe ia, ko e me'a ko ē na'a mau palani ke lī, ko ia pe ia 'e lī."*

English *They are telling me, "Pastor, if we stop providing food, it will be the same, whatever amount we plan to put in, that is all we will donate."*

Money donated to the church project fund is one thing. Money invested in hospitality is another. They sit side by side in a symbiotic relationship. As there is a Tongan say: *'Ai ke tatau ē ngutu mo e tuhu, 'Oku 'uhinga ki he hohoatatau e lea mo e ngāue. This meant that your action should demonstrate what you are saying.* May be church members wished to live up to their words and serve with what they provide.

Giving is seen as a blessing and church members are committed to God through their offerings, in both money and food. Tongan Christian faith encourages people to give their best and they understand that God will bless them accordingly. Tupouta'anea realises that she cannot change the Tongan culture, as church members are giving to God, in appreciation of how God has blessed them and their families. It seems to be about their respect, faith, and blessings: blessed are givers. There are biblical scriptures that encourage a culture of giving:

> *Matiu 7:11. pea kapau a 'oku mou 'ilo ke foaki me'a'ofa lelei ki ho'omou fanau, neongo ko e fa'ahinga kovi kimoutolu, huanoa ho'omou Tamai 'oku 'i Hevani, ha'ane foaki me'a lelei kiate kinautolu 'oku kole kiate ia*
>
> *Matthew 7:11. If you then, being evil, know how to give good gifts to your children, how much more will your Father who is in heaven give what is good to those who ask Him!*
>
> *Saame 85:12. 'E 'omi foki 'e Sihova 'a e me'a 'oku lelei; Pea 'e 'omi hono fua ki hotau fonua.*
>
> *Psalm 85:12. Indeed, the Lord will give what is good, and our land will yield its produce.*

If one accepts that God has provided the resources and food that enables one to give, then to give 'forward' to others is to be thankful to God and to open oneself to ongoing blessing. It is the very nature of what it means to live a life of faith. Even if a person can ill afford to give, there is perhaps a sense of trust that God will bestow blessing in return. To give is to become richer. This shows in a Tongan proverb "'Oua 'e lau kafo, ka e lau lava" (not counting injuries but successes). It is about fātongia, fulfilling duties and obligations.

Giving and sharing is deeply interconnected with the cultural concepts of fulfilling commitment, responsibilities and obligations with a sense of mālie (uplifting of spirit) and māfana (warmth), a positive state of connectedness and enlightment (Manu'atu, 2000).

Duties and Responsibilities

Fātongia is about fulfilling duties, responsibilities and obligations to families, church, wider community, and healthcare services. For example, the provision of foods to people as gifts, is one way of fulfilling your duties and obligation. As Tofuaipangai and

Camilleri (2016) described fatongia as an obligation that is entered freely, and a reciprocity that leads to stronger sense of community.

The hospitality offered to church leaders cannot be ignored. A church minister, Faifekau (God's messenger) is regarded in Tongan society as representative of God (Ketu'u, 2014; Niumetolu, 2007). Food is provided to honour God through the church leader.

Tupouta'anea

Tupouta'anea shared what she sees in providing feasts in respect of her role:

> *Tupouta'anea Ko 'eku sio ki he feast, hangē ko hoku tu'unga ko e Faifekau. Ko 'eku sio 'a'aku ia, 'oku kei fai pe e laupisi. I can see koe laupisi pe ia, koe 'ai pe ko e fakalangilangi 'Otua. Ko e me'a pe ia kuo nau anga ki ai. We cannot stop it.*
>
> *English I look at feast, like my position as the minister. I see, it is with gratification. I can say that it is about joy, their pride of honouring God. That is what they used to. We cannot stop it.*

According to Tupouta'anea, food provision is an integral part of church occasions. She cannot discourage it. The church members' commitment is to provide food to honour God. It is Tongan culture and tradition that the very best of everything, including food, is presented to the church minister. Feasts and giving to the church minister fulfil their obligations to God. Giving is a practice of biblical faith and there is scriptural precedence:

> *Hepelu 13:17. Mo u tuitala ki he kau tu'ukimu'a 'omoutolu, pea fakavaivai kiate kinautolu; he ko kinautolu ia 'oku nau 'ā ke le'ohi homou laumāliea, he ko kinautolu ten a fakamatala kmoutolu 'amui; koe'uhiā ke nau fiefia 'enau ngāue ko ia, 'o 'ikai fai mo e to'e, he 'e ta'e'aonga ia kiate kimoutolu.*
>
> *Hebrews 13:17. Have confidence in your leaders and submit to their authority, because they keep watch over you as those who must give an account. Do this so that their work will be a joy, not a burden, for that would be of no benefit to you.*

Taniela

Taniela, a minister at a Tongan church in Auckland, is fully supportive of health and nutrition programmes for churches. He is aware of the initiative that promotes water as

a preferred drink instead of sweet and sugary beverages. However, some church members give soft drinks as a gift:

Taniela *Pehē foki ‘e he ni’ihi ia ‘oku nau sai’ia nautolu ai, ko ‘enau me’a’ofa ki ha me’a ‘oku fai. Nau omai mo ha packet inu pea ō foki ia ‘o ‘omai e inu ‘o ha’aki ‘o hangē ‘oku ngali fie champion ‘aki ko e ‘omai ha packet lemani ‘e 4 pe 5. ‘Oku ‘ikai te nau ‘ilo ‘e nautolu hono fakatu’utamaki. Mālo pe fie tangata mo e fie champ, ko e fie mateaki’i lotu ‘aki ‘a e me’a ko ia. Ka ‘oku sai he taimi ‘e taha he tafa’aki ko ee ka ‘oku lahi ange ‘ene maumau he tafa’aki ko ee.*

English *Some people say that they like it, as they used these as gifts for some occasions. They brought packet of drinks, presented it with pride and emphasised like a champion, offered 4 or 5 cartons of soft drinks. They don’t know the risk. Thanks for making it up to be a champ and provided with pride. It can be good from one side but on the other side, it can cause more health problems/disadvantages.*

In this further story of Tongan giving, what matters is both the giving, and perhaps that people are seen to be giving. People who are providing soft drinks are not mindful of the health dangers of soft drinks. It is about fulfilling their fatongia, duties and obligations to the church and community with a spirit of māfana (warmth) and sense of satisfaction. Giving more (quantity), as in four to five cartons of soft drinks, seems to be generous. They spend money to buy these drinks. An observer could calculate how much money had been invested in the gift. The minister would like their gift to offer a healthier choice like water and/or juice instead of the soft drinks. However, the giver could be mindful of those who will receive the gifts. It could be they know their friends prefer to drink fizzy drinks, and therefore will be happy to have these drinks. Giving is not just about the act of passing over a gift, but perhaps also the pleasure of watching others, including oneself, enjoy partaking of the gift.

In bringing soft drinks to share, it is likely that the givers hold on to the hope that the generosity of others will also be shared with them. Scripture states:

Paloveepi 11:24. ‘Oku ai ha taha ‘oku nima homo, kae fakautuutu ai pe ‘ene koloa: Pea ‘oku ai ha taha ‘oku angakovi’I ‘ene me’a, Kae masiva ai. Ko e loto fa’a tapuaki ‘e nga’eke: Pea ko ia ‘oku fakaviviku ngoue kehe ‘e viviku ha’ana foki.

> *Proverbs 11:24–25. Your generosity defines your experience. One gives freely yet grows all the richer; another withholds what he should give, and only suffers want. Whoever brings blessing will be enriched, and one who waters will himself be watered.*

In giving generously, people have the hope that they too will be 'watered'. The special occasion will become even more special.

Given that food is an illustration of wealth in the Tongan community, and the church members are seen to be able to afford money and food, it can also be competitive. According to Tongan academia (Kalavite, 2010; Ketu'u, 2014), there are negative motives that influence Tongans behaviour and tauhi vā (maintaining relationship). Fesiosifaki (envy) and fakavahavaha'a (competition) sometimes drive a person to give more food, money, and materials during a misinale rather than a genuine willingness to foaki, donate and provide what the family can afford.

Tupouta'anea also observes the spirit of competition among church members.

> *Tupouta'anea* *'Oku nau kei lele pe kinautolu he fai katoanga ke talanoa'i, "Ko hai na'e lahi 'ene koloa na'e foaki? Ko hai na'e lahi taha 'ene me'akai mo e pa'anga na'e foaki."*
>
> *English* *They are still with celebration to talk about "who gave the most materials? Who provided the most food and money given?"*

It is one thing to be deeply faithful to Christian values of giving, but at the same time people are 'only human'. Tupouta'anea observes a spirit of competition as people see how much others give and measure that against how much they have given themselves. There is tension in a competitive spirit in a community where often families struggle to meet their own needs. Tupouta'anea believed that church members liked talanoa'i (being talked about) and establishing their reputation. She observed church members love to compare themselves with one another. Similarly, one can feel fakamā (shame) if a fatongia (obligation) is not fulfilled (Ketu'u, 2014). I like the way the Living Bible paraphrases 2 Corinthians 10:12: "Their trouble is that they are only comparing themselves with each other and measuring themselves against their own little ideas". The Bible says it is stupid to compare yourself to anybody else, yet it seems such comparisons are made with every offering of food.

Furthermore, fatongia is often seen as reciprocity, so those of higher status also have obligations to serve lower status (Mahina, 2017). It is a particular way of caring for and loving others. In return for receiving gifts from church families, Tupouta'anea wishes to give back to the church. She chooses to do this during Christmas, the season of giving gifts to loved ones.

Tupouta'anea *Ko e Kilisimasi kotoa pe, 'oku 'ai pe 'ema fanga ki'i kato, pe 'oku tokofiha e kau vaivai, ko e kau ta'u 80. 'Oku ma oo leva 'o fai 'ema lotu mo e merry Christmas. That is how we do it. Ko e koloa pe na'e ma'u he Eiki, he Siasi pea tuku pe ke tufa. There were 10 of them. Ko e 'ai pe 'enau ki'i kato shopping, kumi 'enau me'akai healthy. 'Oku meimei 100 e kato 'e taha. Kuo u talaange kia Penisimani, lets' do the best. Ko e 'Eiki pe, koe tapuaki, ko 'ena 'oku ke fuhinga tapuaki pe 'i he 'Eiki. 'Oua te tau fiu he fai lelei.*

English *Every Christmas, we prepared baskets for the many elderly members, those that are 80 years old and older. We visited and did our prayer and merry Christmas. That is how we do it. These are goods received in the Lord, through the church, so we give them out. There were 10 of them. We made them a basket of shopping, bought them healthy food. It is about $100 each basket. I told Penisimani, let us do the best. It is by God, the blessings, the many blessings he received in the Lord. We should not give up in doing good things.*

Tupouta'anea is committed to serving her most vulnerable and yet precious members of her church. She does this every year, and no doubt has done so in every congregation she has served. This is to fulfil her fatongia (obligation) and faka'apa'apa (respect) to the most valuable and yet precious members of her church. It is an opportunity for Tupouta'anea to portray her family wealth and status and demonstrate good healthy food choices in the quality of her gifts. Perhaps she wants to show the church families that this is the kind of food she would like to receive as a gift. Healthy food would be highly valued by herself and her family. A gift is about quality.

Tupouta'anea spends a lot of money on these gifts. Being the church minister, she always receives the best gifts, the most gifts, and money. She wants to share and give back to the church to show that giving is an important part of being a Christian and being Tonga. This is also part of her pastoral care role, mamahi'ime'a (reciprocity) and caring

for the elderly group. Tupouta'anea, as the church leader, wants to set an example and demonstrate her faith and commitment:

Tupouta'anea *'Oku nau 'ohovale. You have to teach them. Tuku e 'ai kai, kae 'omai e pa'anga 'oku 'aonga ange eni. Ko kita ua pe, te ta lava ke teach them. Ko e taimi 'eni 'e 'eke mai ai 'e Sisu. Na'a ku fiekaia, na'e 'ikai ke mou fafanga au. Naa'a ku mahaki'ia ka na'e 'ikai ke mou oo mai 'o 'ahia au. This is the time, te ta lava pe ke teach them. Ko e anga 'enau lele mai na'e 'ikai ke nau mahu'inga'ia, ka te na mahu'inga'ia leva he 'eta me'a 'oku fai. 'Oku mahu'inga 'aupito, you are setting example at a church. 'Oku mahu'inga ke 'ai 'a e leader at church ke nau tokanga.*

English *They were surprised. You have to teach them. Stop making food but use money for this, which is more useful. We are the only one who can teach them. This is the time that Jesus will ask. When I was hungry you did not feed me, when I was sick, you did not visit me. This is the time, that we can teach them. As they did not value this, but they will value what we do. It is very important; you are setting example at a church. It is important for leaders at church to be careful.*

Tupouta'anea and her husband know how significant it is to lead by example. They demonstrate sharing and caring for vulnerable people in their congregation. She identifies who are most in need of her gifts. Tupouta'anea knows that gifting is a significant part in spiritual life of Tongans. It strengthens and maintains relationships with love, respect and caring for others. These are Tongan cultural values and biblical principles that guide her leadership. Tupota'anea wants to demonstrate this by her action, as she wishes to teach and show her church members new ways of gifting with food.

Taniela

Taniela agreed that leaders should demonstrate leadership by their actions.

Taniela *Kapau foki kuo te hoko ko ha taki pe ha leader tautefito hange ko e siasi 'oku te faifekau. 'Oku taau ke te demonstrate 'a e me'a ko e 'oku te feinga ke mo'ui lelei e kakai, e fanga sipi mo e tamai fakalaumalie. Te fai pehe mo kita 'i ha me'a ke tokoni ki he kakai 'i he tu'unga ko ia.*

English *If you have become a leader especially as the church minister, you should demonstrate what you are trying to do for people to be healthy, the sheep and the spiritual father. You should do the same, with things that will help people to achieve it.*

Taniela's understanding of the importance of being a role model is supported by this from scripture:

> *Hepelu 13:7. Fakamanatu hake ki he kakai na'e takimu'a kiate kimoutolu, 'a e fa'ahinga na'e tala kiate kimoutolu 'a e folofola 'a e 'Otua: pea mou fakatokanga'i 'a e iku'anga 'o 'enau mou'i, 'o fa'ifa'itaki ki he'enau tui.*
>
> *Hebrew 13:7. Remember your **leaders**, who spoke the word of God to you. Consider the outcome of their way of life and imitate their faith.*

Therefore, the influence of church leader is significant in his or her family, church and in the wider community. Participants expressed this belief of leading by example and the positive impact in the community.

Summary

All participants are part of a church community with strong Christian and religious beliefs and practices. Diabetes management and food practices are influenced by various factors including fulfilling fatongia (duties and obligations), tauhi vā (maintaining relationship) with God, church leaders and church members. Participants may know what they need to eat but they value fulfilling fatongia rather than managing food practices and diabetes management.

As Fakahau (2020) found in his study that the three most important aspects for Tongan people are fulfilling their fatongia (duties) to church, family and the country of Tonga. This aligned with our study, where participants shared the significant roles of food as part of church functions like misinale, fakaafe and gifting. It influences participant's food practices and diabetes management. It is a communal and relational way of living. Food is also a major component of family, church, and community ceremonials like fai'aho (birthday). The amount of food gifted to the church minister signifies the degree of commitment. Participants who are church ministers struggle to manage diabetes and

food practices in a Tongan church context. The practices described within a church community are similar to practices within the wider Tongan community.

Suka ‘i he nofo fakakolo/fonua – Being diabetic in the community

Introduction

Food is not only for nourishment but it is a symbol of power, wealth and status in the Tongan community (Evans, 2002). The importance of an occasion can be demonstrated by the amount and type of food provided which can also be described as special occasion or a good gift!

Participants’ stories highlighted the importance of the type of food that is provided at community events (Fakahau, 2020; Sevele, 1973). Food provides a sense of belonging and a safe environment, strengthening spiritual as well as cultural beliefs, values, and practices (Dewes et al., 2013; Fakahau, 2020).

Participants stories highlighted the importance of the type of food that is provided at community events.

Cultural value of food

Food is part of who Tongan are and provides a sense of belonging (Pollock, 1992; Tu'inukuafe, 2019; Vainikolo et al., 1993). While some traditional foods may lack nutritional value, their cultural values remain very powerful in the Tongan community in New Zealand (Mahina, 1999). Pigs are the highest and most important meat (animal) in Tongan culture (Evans, 2001; Pollock, 1992).

Taniela is aware of the church community approach and the importance of a display of giving and wealth in Tongan celebrations and occasions.

> *Taniela* *Ko e lahi anga ‘a e puaka, ko e me’a ia ‘oku faka’ofo’ofa ai e pola. ‘Oku ou ‘osi sio pe he ngaahi pola he konifelenisi. ‘Oku fu’u lahi e me’akai, fofonu ‘o fehilihili’i e tēpile. Ko e me’a foki ia ‘oku nau fie tangata’aki.*

English *The more piglets provided (lahi ange ‘a e puaka), that is what makes the feast attractive. I have attended and seen the food provided at the church conference. Too much food, congested on the table. People take pride in it.*

There are certain sizes of pigs that are sanctioned for use by the chiefs that are set aside as of Tongan feasts. It is the practice to set aside the best produce of the land and the sea for the higher authority. Therefore, the number of piglets displayed in a feast indicates the importance of an occasion. The pile of food is also an indication of the wealth and economic status of the provider, the family and church community. A feast is a collective effort, where families and relatives come together to put on the feast. The danger in this practice is that the food that is then consumed, is often in an excess of abundance. The food offered is not a wise choice for people with T2DM, or for a healthy diet. Participants are concerned.

This is supported by one of the Tongan proverbs saying *“Kakā tu’u ofi” (Barren soil near at hand) Havea (1987, p. 1)*

Palōveape *Neongo pe ‘a e kakā ha konga kelekele ‘oku ofi ki hoto ‘api´ ‘e lelei ange ‘a hono ngoue’i mo e ola mei ai´, he te ma’u taimi lahi ange´ ke te toutou a’u ki he konga ngoue ofi. Ko ha ngoue ‘i ha konga kelekele lelei´ ka ‘oku mama’o mo si’isi’i e faingamālie ‘alu ki ai´ pea iku pe ‘o ‘ikai ke sai.*

English *Even the soil nearby is barren, it is still a better site for sowing and reaping, as you would have more time to look after it since it is close by. Compare with a faraway fertile soil with minimum opportunity to look after that would end up being unproductive.*

Foods available at a Tongan feast are convenient and handy. These may not be healthier options for people with T2DM but being available meant easy and convenient choices. Perhaps Tevita and other Tongans with diabetes would prefer healthier food choices but may not being available on site. Therefore, conveniency influenced food practices. As Evans et al. (2001) reported that the consumption of imported foods in Tonga were not related to food preferences nor to perceptions of nutritional values but directly related to affordability. Baumhofer et al. (2020) study concluded that it is important to understand sociodemographic factors, which associated with islands food consumption of Samoan and Tongan adults in the United States. Our study participants highlighted

the importance of creating supportive environment, making healthy food the easy and convenient food for people with T2DM.

Diabetes nutrition education does not recognise the cultural value of abundance in Tongan culture.

Tupouta'anea

Tupouta'anea 'Oku te sio atu ki he inappropriate. Kuo u pehe atu, "'Oku mo u feinga kimoutolu ke u mate au?" Sai ange puaka tunu, ka ko e taimi ko é 'oku 'omai ha ngaahi fu'u puaka lahi (puaka hula). Anyway, 'oku te sio atu, it is inappropriate. Ko e 'omai pe ko ia, fekau 'a Tevita ke fahi, 'ave me'akai ki hono tuofefine, fekau a Paula ke ō 'ave. 'A ia ko e fa'ahinga me'a pehē. Ko e hela'ia ai pe 'a Paula he 'omai ha 'umu he ko ia pe 'e ha'u 'o fahi e puaka ko ia.

English *I see how inappropriate. I said to them, "Are you trying to kill me?" The roast piglet size is better but when they brought that huge pig (puaka hula). Anyway, I see how it is inappropriate. When they brought it, I asked Tevita (husband) to cut and distribute, take some to his sister. I told Puala (son-in law) to share it. That is what happened, and Puala got tired of it, as he is responsible to slice the pig.*

Tupouta'anea respected the church family honouring her ministerial role, but she could not deny that a piglet is not a healthy option for her. She probably does not eat pork as part of her T2DM management. "Maybe food was an ongoing challenge for Tupouta'anea as she asked the Steward and his wife whether they are trying to kill her". The tension of unhealthy food defeats the purpose of a gift. Perhaps Tupouta'anea appreciated the role of piglet in Tongan culture, and a smaller serving size maintained the principle of giving and honouring, but a huge pig was deadly.

Tupouta'anea's personal view opposed Leslie's (2002) study finding in Tonga. She found that sponsoring a large community feast and giving away food demonstrated 'ofa (love and generosity) in that they have been blessed. Furthermore, traditionally food production served to demonstrate that a man is fulfilling his duties as a father, brother, and son and over production was a sign of wealth. Possibly, by sharing and distributing the piglet, Tupouta'anea maintained relationships, tauhi vā, with her family and relatives, as well as demonstrated 'ofa, love and generosity that she has also been

blessed to bless others. Dealing with the excess is an ongoing mood of giving, gifting, and honouring others. This is a contributing factor to food practices.

Being Tongan

In a monocultural Tongan setting, members are comfortable with providing what and however much they want to share. As discussed earlier, food display is an opportunity for Tongan families to showcase their own Tongan food, display wealth and authority (Leslie, 2002). They are less likely to receive criticism about their own Tongan dishes, as everyone will be looking forward to eating and sharing familiar food made by Tongans for Tongans with a sense of belonging and identity (Tu'inukuafe, 2019)

Salome

Salome observed the difference in the food provided at different church functions:

Salome	*'I homau siasi, ko e taimi ko e 'oku mau lukuluku ai, 'e 'ai fakasi'isi'i pe he me'a faka-community, kau ai mo e matakali kehe. Kapau ko 'emau ngaahi me'akai pe 'a kimautolu ki he community Tonga. Hange ko ha'amau katoanga'ofa pe ko ha me'a fakatonga pe. Ko e 'ai pe koee ki he 'osi'osi taha. 'Ai ha fu'u puaka ia 'e 4 pe fiha, kae 'osi ange ko ia, ko e kau kai 'oku toko 20 pe. Kapau na'e kau mai mo ha kau palangi mo ha matakali kehe, he'ikai ke fu'u 'ai pehe'i e puaka ia.*
English	*In our church, when we bring a plate, will bring smaller amount to community events that include other ethnic groups. If we are catering for Tongans only, such as our annual church donation or for Tongan only event, it will be with everything, our all. Will have 4 piglets or more, but there is only 20 people. If others took part, the Palangi (Pākehā) and other ethnic groups, we will not have that many piglets.*

The format is different when Pālangi (white person) and other ethnicities are part of the church community services. Tongan families are respectful of others and allow space to incorporate their food and in their display. As a minority culture, Tongan church members assimilate with the dominant culture (Western) in order to survive but are still able to retain unique Tongan cultural food. Tongans may be obliged to bring such prime food to a mixed gathering, but not as many piglets or abundancy as for an exclusively Tongan feast. Pālangi culture influence and encourage healthy choices and more moderate eating habits.

Food as a Gift

The Faifekau, the church minister, is held in very high regard in the Tongan community both in Tonga and in New Zealand. The Christian principles of offering gifts to the high priest has become part of Tongan culture.

Tupouta'anea *Na'e ta'u 21 'a e ta'ahine 'a e Setuata. Na'e fakahoko mai pe kiate au, ko 'enau ki'i me'a fakafamili pe, pea 'oku loto e ki'i ta'ahine ke lotu'i pe 'e he 'ene ongo kui. Pea u talaange it is fair enough. That is OK and it is fine with me, go ahead and do it ko e me'a 'oku loto ki ai e ki'i ta'ahine. 'Ohovale pe efiafi ko Tokonak ko ia, na'a ma oo ma ua 'o akohiva. Tā ange 'eku ta'ahine, 'Mum ko e hoa 'eni e Setuata 'oku 'i 'api ni. Na'a na ō mai pe 'omai e koloa mo e keke, mai mo e 'umu ko e puaka…'Oku nau hanga pe 'e nautolu 'o toka'i mai 'a e Faifekau . Fai pe 'enau me'a 'a kinautolu, kae tuku pe ia ke 'ave pe me'a 'a e Faifekau. 'Ete sio atu ki he fa'ahinga māfana, 'oku nau 'ilo pe 'e kinautolu ia it is their blessing.*

English *The church's steward daughter had a 21st birthday. I was informed that it was a family gathering. She wished for her grandmothers to bless her day. That is OK, fine with me, go ahead and do that, as that was the birthday wishes. Unexpectedly on that Saturday evening, we were at the choir practices. My daughter called, "Mum, Steward's wife is here at home." They brought Tongan materials, cakes, and a huge pig. They valued the church minister. They had their family gathering and they wished to give Tongan treasures for the minister. I can see that warm spirit. They know that it is their blessing.*

While the minister did not expect or want this gift, Tupouta'anea recognised it as being important for the family to 'give' at this time of celebration. She is probably grateful for the gift, honouring and maintaining the relationship with her, as the church leader. Gifts to show faka'apa'apa (respect) and mamahi'ime'a (reciprocity). Tupouta'anea knew that they did not have to, but it is part of the celebration and special occasion. She understood that the family was committed to give, to honour their church leader. It showed their respect for God's ambassador in their midst. In giving such a gift, there is an expectation that they may be blessed in return: "It is more blessed to give than receive". As the scripture said:

> *2 Kolinito 9:11. kae alaisia alasikolonga homou fakakoloa'ia, koe'uhi ke alaisia alasikolonga ho'omou foaki, 'a ia ko e me'a fakatupu fakafeta'i ki he 'Otua, 'i he 'emau tufaki.*
>
> *2 Corinthians 9:11. You will be enriched in every way so that you can be generous on every occasion, and through us your generosity will result in thanksgiving to God*.

In addition, Tupouta'anea probably appreciate the mother's role and commitment to share the koloa (treasures) prepared to celebrate the milestones of 21st birthday. As the Tongan proverb:

> *Vale 'ia tama: 'Oku 'uhinga ki ha taha 'oku tōtu'a 'a 'ene 'ofa, 'o hangē ko e fai tōnunga 'a e fa'e 'i he 'ene tama, 'a e tatau 'a e la'a pea mo e 'uha.*
>
> *Being foolishly joyful because of a child: When one gives one's all in pursuit of a goal, as in a mother who sacrifices herself for her child.*

Mele

Mele, a health professional, felt that she has been pressured to take food home, a gift to honour her mum:

> *At the feast, people would say "take some food with you". They put pressure on me, to take some food home for my mother. She is 92 years old, and she tends to eat very little, as she aged. My family does not allow her to eat any leftover or reheated food as she would get diarrhoea. A couple of times, I got home and threw the food in the rubbish before I entered our house. I would rather put it in the rubbish as I might end up eating the food myself.*

It seems that the abundance of food is dealt with by distributing it to people considered deserving of it. The 92-year-old mother in this category is free from diabetes while her daughter is diabetic. Pressure is put on the professional leader to take the food home. The giving is more important than thinking about the impact of the gift on a high-risk population. Mele has learnt to prioritise her mother's health and wellbeing over the value of the gift. She does not want to put her elderly mother at any risk. An important Tongan cultural value of 'ofa (love) and faka'aonga'i e 'ofa (accepting and receiving the love), gift of food is compromised for the sake of protecting health and wellbeing of Mele's mum.

Mele supports Tupouta'anea's opinion that food should not be part of every cultural event. Although she is aware of the Tongan ways of receiving gifts for church and community activities, she is more protective of her mum's health. She prefers to throw away the food instead of putting her mum at risk.

Summary

Participants' stories emphasise the cultural importance of food in the Tongan community and how it poses a challenge for diabetes management and healthcare services in New Zealand. Food is part of family, church, and community cultural celebration. Participants talanoa about some foods that are considered to be high fat, high carbohydrate for consumption by Western diabetes management standards but they have high cultural values in the Tongan communities (American Diabetes Association (ADA), 2018; Diabetes UK, 2018; Evans, 2002; Ministry of Health, 2016c; Moore, 2018; Pollock, 1992). Examples are pig, taro, yams, and certain types of carbohydrates food used at Tongan community events. Participants' stories highlighted the importance of setting living examples for people with T2DM within the family (household), church, and Tongan community. Food is a vehicle that is providing a sense of belonging and a safe environment, strengthening spiritual as well as cultural beliefs, values, and practices (Dewes et al., 2013; Fakahau, 2020).

Some of our study participants struggled with food practices when attending community cultural events with unhealthy food served. This is because they still need to tauhi vā, maintain relationships, and meet their duties and obligations as part of a Tongan community. To address this, study participants recommended strategies to make changes for Tongan community in Auckland, New Zealand.

Founga ki he Liliu – Strategies for changes

Introduction

Participants shared the changes that it could support Tongan people with diabetes at church and community gatherings. Regardless of cultural and Tongan ways of giving, there are strategies for changes recognised in the following stories.

Need to adapt Tongan culture

Tupouta'anea

Tupouta'anea believes that our culture is old fashioned:

> *Tupouta'anea 'Oku tau pehe pe "It's our culture". 'Oku ou tui kuo olo kuonga (old fashion) and out of date. 'Oku ou faka'amu ke nau poto, tānaki 'enau silini because everything is money. I tried to encourage them, ken au fakapotopoto mo 'enau pa'anga. Ka 'oku nau talamai 'e nautolu "'Ikai, 'oku sai pe ia kiate kinautolu". That is their way, their culture. 'Oku ou tui au, ko 'etau culture is out of date, ko Nu'usila 'eni.*
>
> *English We say, "It's our culture". I believe that this culture is old fashion (out of date). I would prefer that they are wiser, save their money because everything is money. I tried to explain and encourage them to be wise with their money. But they told me that "No, it is fine with us". That is their way, their culture. I think our culture is out of date, this is New Zealand.*

Tupouta'anea is trying to understand how our Tongan community is fixated with maintaining our culture. She believes that Tongan culture should be adapted to fit in with the New Zealand healthier context. Tupouta'anea tries to encourage Tongan people to be smarter, especially with money. They should create a safe environment and shape Tongan culture to be successful in New Zealand. Yet she meets resistance. Their cultural ways are strongly embedded.

Taniela

Taniela agrees that the church should make changes in support of health messages.

> *Taniela 'Oku 'osi ongo'i pe au ia 'oku taau ke fulihi 'a e fa'ahinga fakakaukau pe koe attitude ko ia 'a e siasi pea mo e community ki he fai katoanga. Ko e toki ngali katoanga pe 'a e 'ai e fu'u talitali.*
>
> *English I feel that it is about time that to change the way of thinking or attitude of the church and community about celebration. It makes it a celebration if there is a big feast.*

Taniela proposed that Tongan churches and community should compromise on food and celebrations. In community gatherings, food should not be the focus. Church is one of the most influential community groups. Being a church leader and a diabetic encourages

Taniela to negotiate with Tongan culture. His position as church minister may influence the church, as people will support the idea that a celebration can be a celebration, with or without a feast.

Catering styles

Participants recognised and supported changes that have already been made to some Tongan church feasts.

Kotoni

Kotoni agreed that changes can be made:

> *Kotoni* *Ko 'emau konifelenisi, 'oku mau 'osi feinga ke fakasi'isi'i e kai mo e ngaahi me'akai. 'Osi ai e ngaahi siasi kuo nau 'osi liliu nautolu. Na'e ai pe ni'ihi na'a nau fakafepaki'i e 'ai cater, ko e fo'i fakakaukau fo'ou foki. 'Oku tau 'ilo, 'oku faingata'a ma'u pe ha me'a fo'ou. Ka ko e fai pe fo'i liliu, everyone said, na'e tonu ke cater kotoa aipe, mo e talitali he Sāpate.*
>
> *English* *For our conference, we tried to limit eating and food provision. Some churches started to make changes. Some people challenge the use of catering as it is a new idea. As we know, there is always a challenge to a new thing/idea. However, when the change was made, everyone said that we should also cater for the Sunday meal as well.*

Kotoni shared how their church conference meals made a catering change. He expected challenges and resistance, but he has seen how his church members appreciated the change. Kotoni understands that, in order to sustain the changes that have been made, a strategy should be put in place for future conferences. It could be that there was relief at not having to spend so much time and money in preparation. Maybe the food was more appropriate to what they felt like eating. And it just seemed like the new way that is more appropriate to the times. Having had the experience, these people are now seeing how catering could also be used for church feasts. New opportunities are there for them to seize.

Salome

Salome supported catering instead of food being prepared, and provided by the host:

Salome *Ko e hotele, the menu is limited to a few dishes. Taimi ‘e ni’ihi, ‘oku ou tui ‘oku sai ange ‘etau o ki he ngaahi me’a he hotele. ‘Oku ngaahi fakalelei e me’akai. Ko ‘etau choices pe ‘e 3 pe 4. ‘Oku ou tui ‘oku sai ane ‘ete ‘alu ki he ngaahi me’a he hotele. Te lava pe ‘o ‘alu tu’u ua, at least you know, ‘oku te fili pe mei he me’akai ‘e 3 pe 4.*

English *In the hotel, the menu is limited to a few dishes. Sometimes, I think we are better off going to occasions in the hotel. Food is well prepared. There will be only 3 or 4 choices for us. I think it is better to attend a special occasion held in the hotel. You may go back for seconds, but at least you know there are only 3 or 4 choices.*

Salome explained that food choices are better controlled when a special occasion involving a Tongan feast is held in a hotel. She shared her experiences as a strategy to improve diabetes control for Tongan people. Salome believes that a menu with limited dishes available, and with healthier options available, will be better for diabetics and everyone else. In addition, there may be the right amount of food available without leftovers to take home.

Tupouta’anea

Tupouta’anea also supported catering and restaurant-style services:

Tupouta’anea *Na’e fai ‘emau fai’aho ‘aneafi. Na’a ku kai pateta mo e supo temata mo e salmon. That was healthy meal, very healthy choices ‘aneafi. Na’e fai he restaurant. Na’e teuteu’i pe me’akai mo served he falekai. Lahi ‘aupito e me’aki mo’ui lelei. It was good to have meals at places like this restaurant. ‘Oku nau ‘ilo e helathy and good food for our people. Na’e ai pe me’akai tonga he menu. Na’e ‘ikai ke u kai me’akai Tonga, ‘osi fe’unga pe au he pateta, salamoni, supo mo e mushroom, ‘osi fe’unga ia kia au. Na’e serve mai e top table ka e buffet e toenga.*

English *I was at a birthday celebration yesterday. I ate potatoes and tomato soup with some salmon. That was a healthy meal, very healthy choices yesterday. It was held at a restaurant. Food was prepared and served by the restaurant. Lots of healthy and a variety of good choices. It was good to have meals at places like this restaurant. They understand healthy and good food for our people. The menu had Tongan food. I did not eat the Tongan food as potatoes, salmon, soup, and mushroom were enough for me. The top table were served, while the rest had a buffet.*

Tupouta'anea talked about her food choices at a birthday held in a restaurant. She shared thoughts about the menu, which has good choices for her diabetes. Tupouta'anea believes that Tongan celebrations at restaurants could be helpful, as the restaurant staff know what is good and healthy for people with diabetes like herself. She knows that Tongan food was available, but she preferred to choose potatoes and soup instead for her diabetes. Tupouta'anea enjoys the supportive environment, with better and healthy food choices available. She is aware of good and appropriate food provided at the restaurant. This is a new way that works.

Engage with young people

Tupouta'anea also thought that young Tongans will be able to better control their food intake and diabetes.

Tupouta'anea *Na'a ku pehe 'e au, ko e to'utangata 'eni 'oku kehe, ke nau live a better life in this country. 'Oku tonu ke tau tokanga ki he patiseti, fakapapau'i 'oku nau mahu'inga'ia he pa'anga, taimi pea ke tau mo'ui lelei foki. 'Oku fiema'u ke tau talanoa, fakamanatu mo vahevahe 'etau ngaahi talanoa (stories) 'e malava ke ne fakamaama honau 'atamai. Ken au sio mo mahino'i e ngaahi me'a 'e hoko, fakatefito he'etau founga ma'u me'atokoni mo e me'akai 'oku te fili.*

English *I would have thought that this generation would be more resilient, live a better life in this country. There should be a focus on budget, emphasise the need to value money, time and to be healthy too. We need to keep on telling, reminding, and sharing our stories as it might open their mind. To see and understand the consequences of our choices.*

Tupouta'anea has not given up on the possibility of change. She turns her attention to the younger generation as those who may be more open to considering cost issues and

to be mindful of healthy food choices. This may be starting with the New Zealand education system where there is an increased emphasis on healthy food education.

Prayer

Faith and prayer form a strategy to help with making changes to improve health outcomes for Tongan people, as Tupouta'anea demonstrated:

Tupouta'anea

> *Tupouta'anea* *My prayer, ke fakamaama 'e he 'Otua 'a e kakai ko 'eni. 'Oku ou faka'ofa'ia 'iate kinautolu he 'oku nau fiefia pe nautolu ke foaki, fai pe foaki ia. 'Oku ou lotu ki he 'Otua ke tapuaki'i nautolu, mo opens their eyes, ke nau sio loloa ki he kaha'u 'enau fanau. 'Oku fiema'u 'etau fanau ke ma'u ha nau nofo'anga lelei mo sai 'enau ako. 'Oku ou feinga ke prioritise mo ako'i e budget, ke lelei honau nofo'anga. Ke ma'u ha nau 'api nofo'anga, tautau tefito kiate kinautolu 'oku nau kei renting. It is a long story … talanoa lōloa ia.*
>
> *English* *My prayer, for God to grant understanding/knowledge among these people. I felt sorry for them, as they are happy to give, and they willingly give. I pray to God to bless them and open their eyes to be wise especially see the future of their children. Our children need to have better housing and education. I am trying to prioritise and teach them about budgeting, to improve our living condition. To have home ownership especially for those who are renting. It is a long story …a long story.*

Tupouta'anea shared her prayers as she needs God's direction and help with her church. She values their commitment and provision but, at the same time, Tupouta'anea wants them to adjust to New Zealand living standards. She is trying to set them on a pathway to being socially and economically successful in this country. Tupouta'anea is seeking God's help as she knows that she needs God to intervene with the Tongan mentality. There are fundamental changes of values and practices that need to happen for the wellbeing of the next generation.

Tupouta'anea

Tupouta'anea saw how leaders should demonstrate good food practices:

Tupouta'anea *The leaders need to live by example, especially he siasi mo 'etau ngaahi me'a fakakomiuniti. 'Oku faingata'a ke ta'ofi nautolu mei he ngaahi me'akai. They want to raise or live up ki honau tu'unga mo honau ongoongo. Ko e me'a ia 'oku talanoa'i, ko hai na'e lahi taha 'ene ngaahi me'akai, lahi 'ene koloa fakatonga pe lahi taha 'ene li pa'anga. It is very materialistic, ko e feinga p eke ai ha me'a te nau 'asi ai, ke 'ilo honau tu'unga he community.*

English *The leader needs to live by example, especially in church and community occasions. It is hard to stop the members from providing food. They want to raise or live up to their status/reputation. The talk would be about, who provided the most food, the most Tongan materials or put in the most cash. It is very materialistic, and all about making a ground to be recognised/defined for their status in the community.*

Tupouta'anea sees that this issue is about much more than food itself. There is a culture of giving that needs to be addressed. There are questions to be asked about the 'cost' to each family of giving, and the reasons behind the generosity of their gift. The giving is to be talanoa'i, to be recognised and talked about, perhaps that they can move up the social ladder. As Leslie (2002) reported that over production of food publicly demonstrated wealth and fulfilling responsibilities. Tupouta'anea is adamant that there needs to be a change to the notion that one's reputation is based on how much one gives. That is her understanding of what matters.

Summary

All participants recognised the significant role of food in church and community programmes. The cultural value of food outweighs the nutrition and health benefits. Being a Tongan with T2DM in a leadership role is an ongoing challenge for diabetes management and food practices. Being a leader there is an expectation to demonstrate healthy eating and food practices. On the other hand, there is also an expectation to accept food gifted as part of honouring, accepting hospitality, showing love and generosity. Christianity and religious beliefs are very strong among Tongans and participants share the impact on their diabetes management and food practices. They shared the importance of the Tongan cultural values of tauhi vā (maintaining relationships) and fulfilling fatongia (responsibilities) related to food provided as gifts

and offerings to God through church feasting, and gifts to church ministers, to guests and to other people in the church.

All participants recognised there is a need to adapt and modify some of the Tongan food culture to fit in with the New Zealand context and help with diabetes management and food practices. The amount and type of food donated to the church can replaced by money (cash), as it still signifies the degree of commitment and the values of biblical faith and being Tongan.

Overall chapter summary

The participants talked about the many factors that impact on how a person manages their T2DM. It is complex and multifactorial rather than being attributable to just one or a few factors. Being Tongan with T2DM required support from family, both household and extended family, kāinga lotu (church), kāinga (community) and the healthcare service providers. They could have been diabetic for long time but did not get the diagnosis until they sought medical help for something else. Being in pain or physical discomfort triggered individual and family motivation to engage with diabetes health services. Diabetes treatment with OHA seemed to be the first choice of treatment, without a dietary and lifestyle management plan provided. They have been diagnosed as an individual, but they are part of a Tongan traditional community in New Zealand with a hierarchy, complex relationships related to Tongan cultural values. Food is fundamental in cultural, spiritual, and religious beliefs with strong connection with family, extended family, and wider Tongan and New Zealand community. Tauhi vā (maintaining relationship), faka'apa'apa (honouring and respect), mamahi'ime'a (reciprocity) in fulfilling fātongia (duties and obligations) are core cultural values. Nevertheless, these participants were able to make suggestions about what could help.

The next chapter reports the findings from the group talanoa and explores this further.

Chapter 6 Findings – Group Talanoa

"Pea ke ʻoua naʻa mou tuku ke fakaangatatau kimoutolu ki he maama ko eni; kae tuku ke fai ai pē homou liliu, he fakafoʻou ʻo homou ʻatamai, ke mou sivi ʻo ʻilo pe ko e hā ʻa e finangalo ʻo e ʻOtua, ʻa e meʻa ʻoku lelei, ʻa e meʻa te ne hōifua ai, ʻa e meʻa ʻoku haohaoa."

Loma 12:2

"And be not conformed to this world: but be ye transformed by the renewing of your mind, that ye may prove what is that good, and acceptable, and perfect, will of God."

Romans 12:2

Introduction

This chapter aims to specifically address the following research questions:

iii. What can we do to help Tongan people with T2DM better manage their diabetes?

iv. What strategies can help improve food practices and diabetes management of Tongan people with T2DM in New Zealand

In this chapter, I present the research findings from three group talanoa with 17 Tongan church and community leaders with T2DM and family members. This round of group talanoa followed on from my data analysis of the individual talanoa. Having expanded my understanding of the meaning for Tongans of having T2DM, my aim with the group talanoa was to work with the Tongan people who had lived the experience themselves (or as a spouse) to strategise on a way forward. Thus, the focus of this chapter is on 'what can we do?' and/or 'how can we help make that happen'?

The following sections present the participants' ideas and suggestions about strategies that can help to prevent diabetes and support people with T2DM for better diabetes management and food practices.

The findings in this chapter are presented in three themes and these themes were not organised in any priority or order of importance:

i. Ngaue'aki 'a e 'ilo (Knowledge transformation)

ii. Polokalama ki he suka (Diabetes service delivery)

iii. Anga faka-Tongan (Tongan cultural values)

The support required relates to contexts of the Tongan worldview and a holistic approach to mo'ui lōtolu (wellbeing) in sino (body), 'atamai (mind) and laumālie (spirit/soul).

Ngaue'aki 'a e 'ilo - Knowledge transformation

Introduction

In dealing with long-term conditions and complex disease such as T2DM, knowledge is important (Mohamad et al., 2015). As reported in Chapter 5, a lack of awareness, knowledge and understanding about T2DM influences personal decisions for diabetes management and food practices. Furthermore, interpersonal factors, including culture, religious beliefs, and perceptions, influence a person's ability to take on diabetes treatment and management behavior (Bezo et al., 2020; Ihara & Vakalahi, 2011; Mohamad et al., 2015; Ndjaboue et al., 2020). Participants in the group talanoa agreed that there is a need for more practical, meaningful diabetes education and culturally safe programmes to support Tongans with T2DM. They struggle to take the initiative and accept responsibilities; although they may have the knowledge, they cannot transform it into practice or do not know where to begin. This is aligned with Simmons et al. (2004) findings that knowledge alone did not translate to healthy lifestyles for Tongan and Samoan church-based lifestyle intervention programmes.

The following sections present participants' recommendations about learning and transforming knowledge in the contexts of mo'ui lōtolu, wellbeing of sino (body), 'atamai (mind) and laumālie (spirit/soul). The challenge is to determine the types of diabetes education and training programmes that are likely to support Tongans with T2DM towards better management of diabetes and food practices.

Taumu'a ke ma'u 'a e mo'ui lōtolu – Goal is wellbeing in body, mind and soul.

The principles of diabetes management and food practices for people with T2DM is to improve clinical outcomes (Ministry of Health, 2014). The demands for dietary management, taking diabetes treatment, testing blood glucose can be complex and hard to achieve a quality of life for people with T2DM and poor diabetes control increases the risk of developing diabetes complications (American Diabetes Association (ADA), 2018; Ministry of Health, 2015c)

However, regardless of poor diabetes clinical outcomes among Pacific peoples with T2DM in New Zealand, the group talanoa participants shared the importance of feeling good and being well enough to maintain relationship and fulfil fātongia, duties and obligations in the family, church, and community (Koloto, 2017; Tofuaipangai & Camilleri, 2016). Like Māori and various Pacific cultures, Tongan health approach is holistic and encompasses mo'ui lōtolu. Quality care is defined in being well in physical (body), mental (mind) and spiritual aspects within the context of family and kainga (extended family and community/church) (Bloomfield, 2002; Tu'itahi, 2005).

The participants talanoa about being Tongans with T2DM, they aim to be well physically, mentally, and spiritually. Though T2DM primarily affects physical wellbeing, it influences the whole person's mental and emotional status and affects her or his spiritual wellbeing.

Meleseini

Meleseini shared the view that all three dimensions are important for health and wellbeing. Diabetes affects all aspects.

> *Meleseini* *'Oku fiema'u ke ō tolu pe 'a e sino, 'atamai mo e laumalie. 'Oku ou tui ko e mahamahaki ko é 'a e sino, te ne hanga 'e ia 'o uesia 'a e laumālie mo e 'atamai. 'Oku fiema'u ke ō fakataha e fo'i tolu. Ko 'etau talanoa 'eni ki he uesia 'e he suka.*
>
> *English* *The three need to go together, the body, mind, and spirit. I believe once the body is unwell, it affects the spirit and mind. The three need to go together. We are talking about the influence of diabetes.*
>
> *(Female, T2DM, Education Leader, Group 1)*

Meleseini knows that the human trinity or as Bloomfield (2002) described 'life is threefold, sino (body) 'atamai (mind) mo e laumālie (spirit). They are interrelated, interactive and work together for the best and complete personal wellbeing. Meleseini believes that one aspect cannot function well without the other parts. Perhaps, when her blood sugar is high, Meleseini experiences that, physically, she feels tired and lethargic. Such signs and symptoms of hyperglycaemia are also likely to affect her mental wellbeing, making her stressed and not able to concentrate on her work. Meleseini could miss church activities because she needs to stay home and rest. As a

church minister's wife, she knows how important it is to be well mentally, physically, and spiritually to fulfil her duties both at home and at church. Probably, Meleseini was thinking that she is only 'aonga (useful) when she can perform her fatongia (duties and responsibilities). Therefore, she emphasised that wellbeing of body, mind and spirit/soul should be covered in the diabetes learning and education programme for Tongan people.

Soane

Soane agreed with Meleseini, saying that a healthy body means a healthy spirit to fulfill his duties to God.

Soane *Ko e mo'ui lelei ko é 'a e sino 'o e tangata, pea 'e mo'ui lelei 'a hono laumālie. Pea 'e lava ke fakahoko lelei 'a e finangalo 'o e 'Otua.*

English *When human body is healthy, we will have healthy spirit. And will be able to do properly, God's will.*

(Male, T2DM, Church Minister, Group 2)

Soane, as a church minister with diabetes, shared his view that being physically well means being spiritually well too. He shared his own experiences; he is getting old (73 years old) and probably feels the effect of T2DM in his body and spiritual wellbeing. Perhaps Soane is aware of the disruptions of his daily functional activities and role in the church because of a breakdown in his physical and spiritual state. He wants his story to be part of a diabetes learning and education programme as he can relate to older Tongan adults with diabetes.

Tupouta'anea

Tupouta'anea, in contrast, suggested that diabetes only affects physical wellbeing.

Tupouta'anea *Ko e sino pē. 'Oku 'ikai ke kau ai 'a e laumālie ia he suka, ko e sino pē.*

English *Only the body. Diabetes does not involve the spirit, only the body.*

(Female, T2DM, Church Minister, Group 1)

Tupouta'anea, as a church minister, seems to believe that spiritual wellbeing can rise above any physical illness. Perhaps she continues to feel well and able to fulfil her

fatongia (responsibilities), her pastoral and spiritual care for church members. Tupouta'anea might still be able to read her Bible and worship God while being diabetic. Her faith could keep her going. It is well with her soul. Tupouta'anea may be aware that body, mind, and spirit are interlinked and, while being diabetic affects the body, that does not mean that the spirit is unwell also. Spiritual wellbeing is likely to be seen as what matters most.

As discussed in Chapter 2, in this research, I agreed with Bloomfield's (2002) approach to health. It is holistic in terms of mo'ui lelei (good health/life) and mo'ui lōtolu. In this context, complete wellbeing should be a focus for Tongan people with T2DM and education programmes should incorporate mo'ui lōtolu. Participants in the group talanoa confirmed the importance of a holistic approach, with spiritual wellbeing seen as what matters most of all. There is also a recognition of the fact that, in order to effectively lead and serve others, one must have energy and concentration and must 'feel well'. Thus, maintaining control of one's own diabetes is a responsibility one has to the whole community. Similarly, helping leaders to achieve good diabetes management is a reciprocal benefit to those whom they lead.

Ko e Loto – The Heart

Loto defined as 'interior (inside)', 'mid-heart – seat of affection' (Churchward, 1959, p. 32). Loto also referred to as 'soul' (inner being). In order to turn knowledge or information into action, learning aims to connect with the participants through the loto, heart as the centre of authority (Ofanoa, 2009). As of my Methodist upbring, the church motto "Ko Tonga mo'unga ki he Loto" (Tonga's stronghold is its heart). The group talanoa participants recognised the need for a good heart (loto lelei), as the foundation on which to build relationships, accept information and transform knowledge to action. They believe that the process for behavioural change is to believe, accept, trust information, desire and willing to take responsibility, for achieving good health and wellbeing.

Salome

Salome has tried many times to educate her husband about cassava. It is a Tongan staple food, very rich in carbohydrate, and it is not a good choice for people with T2DM.

Changes only happen when information is explained and accepted with loto lelei (good heart)

Salome *Na'e fa'a 'ita ia kapau 'oku 'ikai ke u kai 'ene cook. Ko 'eku hanga ko é 'o fakamatala he fo'i taimi totonu, na'e loto lelei ai. Ko 'eku fakamatala 'a e ma'olunga hoku suka he kai manioke, 'o mahino ki ai. 'Oku ou sio leva 'oku 'i ai e liliu, 'o 'ikai ke to e 'ita he 'ikai kai 'e ha taha 'ene fu'u haka manioke.*

English *He is usually disappointed if I do not eat what he cooks. When I explained to him in the right time, in good heart, he was willing. I explained that my blood sugar is high from eating cassava, then he understands. I have seen changes as he is no longer disappointed if no one eats his cooked cassava.*

(Female, T2DM, Health Professional, Group 1)

Salome appreciates her husband's effort in preparing meals for her and the family. She prefers to have good diabetes control rather than tauhi vā, maintaining her relationship by pleasing her husband in eating cassava. Salome is aware of her husband's frustration and disappointment which can be emotionally disturbing. He may think that Salome does not respect and appreciate his efforts. Salome's husband cooks with good intentions but it becomes a point of tension for Salome, and no doubt for the whole family. Perhaps Salome is aware that she needs to share her diabetes knowledge and lived experience with her husband. She needs him to understand and support her food preferences. Salome was pleased that her husband was willing to listen and opened his heart to accept the information. He related to her personal experiences and decided to make changes. Salome advocated that learning about diabetes requires participants' loto. It is core for decision making, so they are receptive and willing to make the necessary changes. She also recommends that sharing diabetic personal lived experience can help win Tongan hearts (loto'i Tonga) and transform information into action. Salome's husband accepted and transformed his knowledge into action, which relieved some of the tensions around food preparation at home.

Ko e laumālie – Spiritual wellbeing

Soane believed that Tongan people already have known information about diabetes, and he relied on God's help and spiritual guideline for people to accept and transform knowledge into action and make changes.

Soane *Ko e me'a ki he liliu, ko e me'a lahi te u lotu pe 'o kole ki he 'Otua. Koe'uhi foki 'oku 'ikai ha'aku mālohi 'o'oku. He'ikai te u lava au 'o fakama'opo'opo nautolu kae 'oua ke ne kau mai ke lava 'o fai e ngāue. Koe'uhi 'oku mafai lahi 'a e 'Eiki he me'a kotoa pe, 'a e liliu, fakafo'ou ki he famili mo e Siasi.*

English *With changes, I mainly need to pray and seek God's help. Because I do not have the power. I cannot unite them until God gets involved and enables me to do the work. Because God is the highest authority over everything, the changes, renewal of families and church.*

(Male, T2DM, Church Minister, Group 2)

Soane is aware of his limitations and what he can do to promote any behavioural changes and diabetes management. He knows that without God's mighty power, he cannot change people's hearts and convince them to take responsibility for wellbeing. The idea of learning is to help people with T2DM live ordinary useful lives. Loto can be a hindrance if people do not trust leaders or see the benefit of making changes. Soane falala, trusts in God, relies on God's help and direction, as he knows that Tongan people respect God's help. He knows that, with spiritual wellbeing, it will work with his church and family. As a Christian, Soane has faith that, with Tongan values of loto lelei (good heart), loto mamahi'ime'a (loyalty), and loto faka'apa'apa (respect), people will submit to God and learnt information will be transformed into action. In such a holistic context of learning they are more likely to accept the insights about how they can more effectively manage their diabetes. God's help will motivate people to open their hearts and engage with a holistic learning process to accomplish knowledge transformation. This knowledge transformation refers to Soane's ideal of changes in Tongan people's everyday habits and practices that will enhance their wellbeing.

'Ilo mo e ifo – Knowledge vs tastes/flavours

Food choices are influenced by many factors including culture, taste, knowledge, attitude, and personal perceptions about healthy eating (Bartkiene et al., 2019; Kourouniotis et al., 2016; Moata'ane et al., 1996). Participants find it hard to change their food practices and be wise with the types and amount of food they eat and drink.

Salome acknowledged the common Tongan saying:

Salome Kai ‘aki ‘a e ‘Ilo, kae ‘ikai ko e Ifo.

English Eat according to knowledge, but not taste.

(Female, T2DM, Health Professional, Group1)

Salome highlights that, most of the time, food choices are not determined by nutritional knowledge. She probably admits that her mind knows what to do, but her loto (heart) chooses to eat what ifo, tasty, delicious and appeals to her. Perhaps Salome relates ifo (tasty and delicious) to oily and fatty food. As one of the Tongan the traditional dish “vovo” made from cook cassava, breadfruit, or banana. They are mashed (tuki) until it is vovo (soft and spongy) and mix with thick coconut cream (lolo’i taufua) for flavour (ifo). This dish is described in Tongan as “ifo pea vovo”, delicious, tasty, and spongy. May be Salome wants to emphasise flavour and taste are social determinants of food practices. Knowledge and understanding are one aspect and sense of taste should be included in any diabetes training and knowledge transformation programmes for Tongan people with T2DM. ‘Ilo and ifo are also catchy message and rhythm of ‘ilo and ifo captures Tongan minds and connected with the hearts as Tongans are poetic and story telling people.

Ko ‘api ‘a e ako’anga - Home as the learning/education centre

Participants provided perspective about what is needed for diabetes education to translate effectively to Tongan communities. They recognised that a Tongan person with diabetes requires family support as they live within a family context. Participants suggested that, for the individual to change, the family must change. Self-management is a western individual approach which is culturally unsafe for Tongans’ collective and communicative living conditions. Family members need to learn and gain diabetes knowledge and skills to assist people with T2DM to manage their diabetes.

Soane

Soane agreed that education starts at home as children learnt from adults in the family. Household and family members show their love by providing healthy food for people with T2DM. Through demonstrating love and caring with healthy food at home, children learnt and put it into practice at church.

Soane *Ko e kamata ko ee 'i 'api pea 'e 'alu, 'o tafe 'o a'u ki he loto'i Siasi. Ko e ako'anga ko 'api pe. Ko e me'a ko e 'e fai 'i 'api, 'e sio 'a e fānau, pea ko e me'a pe ia te nau fai. Kamata 'i 'api pea te toki hiki mo ia, ki he feohi'anga 'a e siasi.*

English *Learning starts at home, and it will overflow/run into the church. Home is the setting for education. What is done at home, children observe and put it into practice. Start at home and take it with you to the church fellowship.*

(Male, T2DM, Church Minister, Group 2)

Soane emphasised the importance of family and household support. He believes that home is the foundation for good health. If healthy food practices are demonstrated and taught at home, then the whole family can practice it at church and within the community. Maybe as a church minister and a father, Soane's personal experiences have reminded him that family is the foundation for diabetes and food management. Once the family transforms knowledge into action within the collective context, diabetes management is more achievable and meaningful. As discussed on Chapter 2, in New Zealand, Self-Management Education (SME) programme are effective for individuals with T2DM (Gamble et al., 2017). However, Soane is suggesting that change for healthy eating needs to start with the family. This is important for development of a Diabetes SME programme for Tongan people with T2DM.

Pita

Pita also believes that the whole family should learn about diabetes to support the family member with diabetes. He shared that learning about diabetes would help him be able to prepare appropriate food for his wife.

Pita *Hange ko hoto fāmili, 'oku suka hoku hoa. 'Oku tonu leva ke ako'i au mo e fānau. Hangē ko au, 'oku 'ikai ha'aku 'ilo 'a'aku 'e taha ki he suka 'o hange ko e lau 'a hoku mali. Kapau he'ikai te u 'ilo au ki ai, he'ikai te u aware au. Fai pe 'e au hoku fatongia ko e cook. Ko e me'a pe ia 'a'ana ko 'ene kai pe 'ikai*

English *Like my family, my wife is diabetic. The children and I should also be learning. Like me, I do not know anything about diabetes as my wife shared. If I do not know about it, then I will not be aware of it. I deliver my responsibility as the cook. It is her choice whether to eat or not.*

(Male, Non-diabetic, Support Person, Group 1)

Pita admitted struggling to support his wife at home. In the group talanoa context, he said that he wants his family to gain knowledge, so empowerment and involvement are key in the diabetes management and food practices of his wife. Pita realises that the most highly valued aspects of diabetes management and efficacious food practices start at home. He needs to be in a situation where his heart accepts diabetes information, enabling his mind to transform it into action and then he can prepare the appropriate food. Health professionals need to remember that the whole family needs to be upskilled in the food management of diabetes.

Tevita

Tevita shared how he observed, during a community meal, there are young children who preferred water. He was aware that children had learnt and been well supported at home to avoid sugary sweet drinks as they are not good for health and wellbeing.

Tevita *'Oku 'i ai pe ngaahi fāmili ia, 'oku 'osi ako'i pe 'e kinautolu 'enau fānau. Hangē ko e ngaahi kui, honau fanga ki'i mokopuna. 'Oku 'ilonga pe taimi 'oku tau ma'u me'atokoni fakataha ai 'i 'api siasi. 'Oku 'ikai ke nau ala kinautolu ki ha inu melie. 'Oku nau inu vai pe. Ko e natula foki 'etau fānau, he'ikai te nau inu e kinautolu 'a e vai. Te nau inu 'e nautolu 'a e inu melie. 'Oku tau sio kitautolu, 'oku 'i ai e fanga ki'i fānau 'oku ifo ange pe 'enau inu 'e nautolu e vai. 'Oku 'osi anga honau u'a 'o nautolu, 'osi ako'i pe ia 'i 'api ke nau ngaue'aki pe inu 'o e vai. 'Oku kovi 'a e inu mēlie. 'Oku nau anga pe kinautolu ki he inu e vai.*

English *We have families that they taught their children. Like grandparents taught grandchildren. We can tell when we have shared meal at church. They do not touch the sweet beverages. They drink water. Our children's nature is that they do not drink water. They rather have sweet drinks. However, we observed some children who preferred water. Their appetite is used to it, they have been taught at home to drink water, sugary drinks are bad. They are used to drinking water.*

(Male, T2DM, Support person, Group 1)

Tevita is convinced that healthy food choices can be achieved, especially if the family and household encourage it at home. He is aware that most Tongan children at church preferred sweet and sugary drinks. Tevita admires families and households with children who choose water instead of sweet drinks especially when started on this habit early in

life. He understands the benefit of having grandparents as they practice Tongan core cultural values of ‘ofa (love), mamahi’ime’a (reciprocity) as they would like their grandchildren to avoid getting diabetes. Perhaps he desires that other church families learn from them and adopt the healthy food practices. Adult members of households make decisions as to what and how much foods and drinks are available for family and children. Maybe Tevita and Tupota’anea, as church leaders, would consider developing a nutrition policy for the church’s families/households and encourage drinking water at home and on church premises. It will go hand in hand with a group recommendation for a church-based training programme.

Mahu’ingamālie – Meaningful

Mahu’ingamālie means “perfectly clear to the mind: stronger than māhino/understanding“ (Churchward, 1959, p. 318), is meaningful and applicable to the context. It is a combination of the words ‘mahu’inga’ meaning “precious, valuable, important” and ‘mālie’ meaning “good, favour”. Therefore mahu’ingamālie is an experience of mālie that a person arrives at when she or he makes sense of the meanings as well as the connections between the context, meanings, and the relationships created with others (Manu'atu, 2017). Hence mahu’ingamālie is not just a person understanding (māhino) something but that person also creating connection(s) with the context, to what she or he understands. In this way, the understanding is more in-depth and more meaningful.

Group talanoa participants agreed that receiving and learning information about food and diabetes needs to be connected and applicable to the context of Tongan people with T2DM. Mahu’ingamālie is a position of understanding the information and translating the understanding into being-in-the-world. It needs to consider the level of understanding, knowledge and participants’ experience and Tongan worldview.

When Salome, a health professional with no family history nor experience of any signs and symptoms, heard about diabetes, it was not applicable to her situation. She was not diabetic by then, so it was not important to her and did not connect with her loto (mid-heart/soul) and inner being to make sense to her.

Salome *Na'a ku fanongo pe au he suka 'i Tonga, ka na'e 'ikai ke mahu'ingamālie kiate au. Na'a ku ha'u pe au 'o ngaue he health, ka na'e 'ikai pe ke mahu'ingamālie ia kia au. Ako pe au ki he suka, ka na'e 'ikai pe ke mahu'inga ia kiate au. Ko 'eku toki suka ko e 'a'aku, pea u toki fiema'u leva ke u 'ilo pe ko e ha 'a e suka. Na'e te'eki ai ke fu'u mahu'ingamālie kiate au 'a e me'atokoni.*

English *I heard about diabetes in Tonga but it was not meaningful to me. I came and worked in health, but it did not make sense to me. I learnt about diabetes, but it was not valuable or important to me. It was not until I became diabetic, then I wanted to know what diabetes is. I was not fully aware or did not understand how it relates to food.*

(Female, T2DM, Health Professional, Group 1)

Salome believes that meaning comes with lived experience. To help people understand the context and make important decisions, the context and connections need to be real. If the person themselves, or a close family member, develops diabetes, the need to understand becomes real. Stories told by people one knows who have diabetes make it real. It is only when it is about 'me' or 'someone known to me' that people begin to care and make the effort to understand and connect with other people.

Fakahinohino/Fakatātā'i - Learning through demonstration

Salome believed that learning about diabetes requires practical demonstrations and meaningful explanations. She showed and explained to her husband the relationship between her blood sugar level and food intake. Even though she has repeatedly explained to Pita that cassava is not good for a diabetic, he continued to cook cassava for the family. Salome's personal experiment finally convinced Pita to discontinue asking her to eat cassava.

Salome *Na'a ku hanga leva 'o tesi'i 'aki 'eku me'a sivi suka. Kapau te u kai manioke he efiafi ni, te u 'ā hake 'oku 8 – 9 hoku suka. Kapau te u kai ma, laise pe siaine, 'oku ou 'a hake 'oku 6 pe hoku suka. Na'a ku fai e fo'I experiment ko ia, pea toki mahino ki ai, 'a e 'uhinga 'eku talaange ke 'oua 'e to e haka e manioke. 'Oku fiemalie leva, 'o tali 'a e fo'I fakakaukau. Ko 'eku fakamatala ko e ki ai, 'o mahino, pea u talaange ki ai 'eku fo'i tesi ko e hoku suka, 'oku ou sio leva ki ai, 'oku 'I ai e liliu leva ai.*

English *I used my glucometer to test my blood sugar. If I ate cassava for dinner, I woke up in the morning with a blood sugar level of 8 – 9. If I ate bread, rice, or cooked banana, I woke up with a blood sugar of 6. I showed him my experiment. He understood the reason why I asked him to stop cooking cassava. He was happy and accepted the idea. I explained it, showed him my blood sugar test result, then I observed changes made.*

(Female, T2DM, Health Professional, Group 1)

Salome believed that in order to convince her husband to understand and support her food choices, he required a practical demonstration and precise explanation of connection to blood sugar level. Numeracy is required to make the connection between food intake and blood sugar level. Seeing the direct impact of the type of food on blood sugar levels convinced Salome's husband is believing, and understanding the connection between food intake and blood sugar level. This was real. Theoretical knowledge became lived experience. This example shows the power of being directly involved with monitoring blood glucose levels, seeing is believing.

Tevita agreed that healthy food choices should be demonstrated as part of a nutrition training programme. Parents and grandparents need to see, taste, and learn and involve with preparing healthy meals for their families. This is in line with the Chinese proverb: *"Tell me and I may forget, teach me and I may remember, involve me and I learn".* It reminds me of how we, as Tongans teach the young ones about lālanga (weaving) and toutai (fishing), you have to be part of the process, look at demonstration then get involved.

Tevita believes that this type of training approach is appropriate for Tongan people. The participants' take-home message is simple and practical for parents and grandparents to practice at home.

Tevita *'Oku fakalele 'a e polokalama ako 'i he Siasi, tuku 'a e lotu he Sapate. 'Oku fakalele 'e he pule'anga, 'oku ha'u e fa'ahinga mei he potungaue mo'ui. 'Oku 'ai mo e ki'i me'akai mo'ui lelei ke nau sio ki ai. Koe'uhi, ke nau oo mo e fo'i mahino ko ia. Ko e me'atokoni totonu 'o tokoni'i 'aki honau fanga ki'i mokopuna, koe'uhi 'oku nau sino foki kinautolu ia. Ke lava holoki 'a e kai, mo 'aonga 'a e ki'i ako 'oku fai. Ko 'eku tui 'a'aku ia, 'oku fiema'u 'aupito 'a e polokalama ako ia 'a e pule'anga ke ako'i 'a e ngaahi famili 'i he ngaahi me'akai pehee.*

English *There is a training programme run after church service on Sunday. It is funded by the government and delivered by health services staff. Healthy meals prepared and served for participants to see. This is done so that they can take what they have learned, have seen the right types of food serves and take knowledge gained. The appropriate food to apply in their homes which will improve their grandchildren's weight problems. If they can reduce the amount of food they eat, so there is a benefit of the training. I believe that there is a huge need for such government initiatives/programmes to teach our family about healthy eating.*

(Male, T2DM, Support person, Group 1)

Tevita and his wife, the church minister Tupouta'anea, are grateful for the training programme delivered at church. The programme time is convenient as Sunday is a prayer and resting day for Tongans. Tupouta'anea most likely to choose the training time and day to fit in with church families' time, making it more accessible, and she expects a good participation. Training is delivered at the church venue which is a familiar place for participants. In addition, the training is conducted by health experts, more likely to be Tongans, and this adds value to the training programme, especially if it is delivered in Tongan language. Grandparents are most likely to enjoy and understand it, and to feel at ease in asking questions in Tongan. The training programme is financially supported by the government health services, and it is most likely to be free for church members. Tevita and his wife, Tupouta'anea, recommend others to offer similar programmes. Perhaps the ethnic-specific cultural learning styles embedded within the social and spiritual environment of Tongan church communities will provide a more accessible and culturally safe practical demonstration of healthy food for T2DM prevention.

Founga ngāue ki he suka: Diabetes service delivery

Introduction

The current diabetes services in New Zealand is guided by the national Quality Standards for Diabetes Care (Ministry of Health, 2014) and the Living Well with Diabetes Plan (Ministry of Health, 2015c). They include national approaches to diabetes prevention, treatment, and care services to reduce the burden of diabetes mortality and morbidity on health system. Furthermore, Diabetes Care Improvement Packages (DCIP) is a community and primary care-based programme designed and implemented by each

District Health Board (DHB) based on their local community diabetes needs. It has also provided inconsistency/inequity quality diabetes services across New Zealand with few proven effective interventions in the Pacific communities (Pacific Perspectives, 2015; Pack, 2018).

Despite Pacific health being a priority over the past two decades, there are persistent and significant inequities in health outcomes for Pacific peoples (Ministry of Health, 2016a). T2DM is significantly higher in 20 – 79 years old for Pacific adults (20%) compared to Maori (10%) and Asian (8%) and New Zealand European (6%). These results indicated that New Zealand health and diabetes services are not meeting Pacific people's needs.

This section presents the participant's ideas and suggestions about strategies that can help to prevent diabetes and support Tongans with T2DM for better diabetes management and food practices.

Kamata'aki e Sivi Suka - Start with screening:

Not all group talanoa participants were aware of the New Zealand guidelines for diabetes screening nor the risk factors for developing T2DM (Ministry of Health, 2015c). Given the experiences of T2DM participants, the group talanoa recognised the high-risk profiles of Tongan families with diabetes. They gave examples of how an early screening programme for T2DM would have helped them or their family members to recognise their risk of developing diabetes earlier.

<u>Sivi pe 'oku ke suka – Screen for diabetes</u>

'Olivia shared a story about how she went to the diabetes centre at Vaiola Hospital in Tonga with a request that they test her blood sugar. She was told that her blood sugar was 5 and some points. The diabetes health provider (nurse) told her that she was at risk of getting diabetes. 'Olivia told the diabetes nurse that she would like to do one week of lifestyle changes, and she would come back to repeat her blood sugar test.

> *'Olivia* *Na'a ku foki leva ki 'api 'o fakamalohisino mo tokanga'i 'eku me'atokoni. Na'a ku tokanga leva ki he mo'ui lelei he na'a ku ilifia 'i hono talamai ko é 'oku tu'u laveangofua. Na'a ku 'alu atu 'oku 4 mo e poini hoku suka. Pea u 'ilo leva ta 'oku makatu'unga pe mei a kita.*

English *I went back home, did exercise and looked after my food intake. I was mindful of good health as I was scared when I was told that I was at risk. When I returned, my sugar was 4 with some points. Then I realised, it entirely depends on myself.*

(Female, Non-diabetic, Support Person, Group 2)

The diabetic nurse probably explained to 'Olivia that she has impaired glucose tolerance (IGT) or pre-diabetes. The identification of IGT provided an early warning and the opportunity for 'Olivia to take action and prevent the progression to T2DM. That confirmed 'Olivia's perception of being at risk of developing T2DM. She was determined to prevent diabetes and committed to making changes to a healthier lifestyle. Perhaps 'Olivia wants a high-risk population approach and to encourage screening for diabetes, as knowing one's blood sugar level and the early detection of IGT increases diabetes awareness and may prevent the development of T2DM. She advocated for lifestyle changes, doing some exercise, increasing incidental activity levels, and eating healthily to prevent or delay the development of T2DM. Such diabetes prevention programmes happen outside primary health care services. Group talanoa participants recognised that community-based diabetes services are an important extension of the health care system. They are often more accessible to Tongans, and they incorporate a collective approach to T2DM.

Sivi suka fakafāmili – Family screening for diabetes

There was general agreement that diabetic screening needs to engage with the whole family especially for those who have T2DM within the family.

Saimone

Saimone recognised that he should have been screened for T2DM earlier. Even though his mother died from diabetes, it did not trigger a need in him to be screened for diabetes.

Saimone *Na'e mate 'eku fine'eiki lolotonga 'ene tokoto 'i falemahaki ko e tu'usi hono ki'i fo'i va'e. Na'e 'ikai ke pehe ia na'a ku 'alu au 'o sivi ke u 'ilo ai 'oku ou Suka. Ko fe 'ema sivi mo'ui lelei ke ma folau he ngaue, talamai 'e he Toketa, 'oku ou suka.*

English *My mother died while in the hospital as her toe was amputated. I would not say that I went for a test to find out whether I had diabetes. It was when we (with wife) had medical assessments for our work trip, the doctor told me that I was diabetic.*

(Male, T2DM, Church Minister, Group 2)

Saimone realised that having a first-degree family history of diabetes increased his risk of developing T2DM. Yet he did not take time to think about himself and his risk of getting T2DM and so did not undergo screening for diabetes. Perhaps he felt well in himself and did not see the need to test for diabetes. Saimone probably thought that he was still young and could not get diabetes and, while his mother got diabetes, she was becoming old. However, he can now see the context of being at risk and the benefit of screening for T2DM.

Participants agreed that knowing their own risk profiles makes blood sugar level screening meaningful (mahu'ingamēlie) and applicable to each individual and their families.

Sivi suka ma'a e fānau: Diabetes screening to include children

It was suggested that with Tongan people being at higher risk of developing T2DM, the whole family should be screened for diabetes, including children. As family history and being Tongan (Pacific) are non-modifiable risk factors, it is important to encourage all family members to find out whether they have an increased risk of developing T2DM.

'Olivia

'Olivia knows that her children are at risk of getting T2DM due to their father's strong family history of diabetes. She has already got her two children, who are below 30 years of age, to screen for diabetes. 'Olivia is pleased that they are not diabetic yet. However, she constantly reminds them that they need to be conscious of.

'Olivia *'Oku mo 'ilo ho'omo Dad, 'oku ha'u mei he famili suka. It is likely te mo muimui ai he 'oku 'i he toto. Te mo suka kapau he'ikai te mo tokanga ki ho'omo ma'u me'a tokoni.*

English *You know that your dad is from a diabetic family. It is likely that you will follow the trend as it is in the blood. You will get diabetes if you do not look after your food intake.*

(Female, Non-diabetic, Support person, Group 2)

‘Olivia believes that screening for T2DM will trigger children and family members to be aware of their diabetes risk profile and thereby give them the opportunity to make healthier food choices. ‘Olivia perhaps wants to remind families with diabetes that it starts with them. They need to take responsibility and be wise about their food choices from a young age. For knowledge greatly enhances the probability of preventing the onset of T2DM. Therefore, a very promising future healthy lifestyle for the younger Tongan population.

Sivi ‘a e fānau ‘oku nau sino: Target overweight and obese children

Tongan people with weight problems are at higher risk of developing T2DM. Participants agreed that their children are at higher risk if they are overweight or obese.

Patiola

Patiola shared her family’s frustration with her children. She thought that they underestimate their risk and seemed ignorant. Patiola thought that they do not care or worry about being at risk of developing T2DM. As a health professional, a mother, and support person for her diabetic husband, Patiola believed that diabetes awareness and risk reduction intervention programmes are required to address food practices and weight problems among the Tongan community.

Patiola *‘Oku sisino ange e fānau ia he mātu’a. He ‘oku nau fa’iteliha pe nautolu. Kai e McDonald, kai e fa’ahiga me’a kotoa pe ‘oku nau fie kai.*

English *Our children are more obese than their parents. Because they can eat whatever they wish to eat. Eat McDonalds and anything they want to eat.*

(Female, Non-diabetic, Support Person, Group 3)

Patiola knows that obesity is a risk factor for T2DM, and healthier lifestyles and food choices are important to prevent obesity and T2DM. In New Zealand, takeaway food is an ongoing temptation, often leading to obesity. Perhaps Patiola is suggesting that screening for diabetes among children with weight problems could give them the incentive to improve their food practices and lifestyle behaviours. She sees the benefit of early detection in a particular population at high risk of developing T2DM.

Sivi suka ‘a kinautolu ‘oku mo’ua ha mahaki tauhi (Regular screening for people with long-term conditions)

Participants in the group talanoa recognised that Tongan people who have other long-term conditions especially need to be screened for T2DM. Tevita was conscious of high blood pressure and weight problems, recognising it might increase his risks of developing T2DM. As part of chronic care services, Tevita got a free annual blood test and a medical review with his GP. Tevita explained that since he does not have a history of diabetes in his family, he was not worried about finding out his blood sugar result. He was surprised by his T2DM diagnosis and to hear that he was previously prediabetic. Tevita shared that the annual routine test did not point out his risk of developing T2DM. He was relaxed and did not engage in any specific lifestyle behaviour to prevent T2DM.

Tevita *Kapau ‘e lava ‘o feinga’i e kakai ke nau lava sivi fakamahina tolu. ‘Oku ‘ikai ko e kau Suka pe. Kapau ‘oku ai ha fa’ahinga fokoutua kehe, ‘e ‘ilo ai pe ‘oku nau suka. ‘E talamai pe ‘oku fiha honau suka he taimi ni. ‘E lava leva ke fakatokanga e tokotaha ‘oku meimei suka. Koe’uhi ke fakapotopoto ange ‘ene kai. ‘Oku fiema’u ia ke sivi fakamahina ‘e tolu ‘a e tokotaha kotoa pe.*

English *If we get everyone to test every three months. This is not for diabetics only. If you have chronic conditions, they will find out whether they got diabetes too. They will know about their current blood sugar level. It will alert the pre-diabetics to be wise with food practices. Everyone should be tested every three months.*

(Male, T2DM, Support person, Group 1)

Tevita sees that more regular blood tests, the three-monthly vs annual routine blood tests, would have increased his awareness of and seriousness about being at risk of T2DM. Maybe the health provider did not inform Tevita of his raised blood sugar level and the importance of losing weight to prevent T2DM. He now uses his personal experiences to inform others, to be aware of their diabetes blood test results. There is a call for health providers to take responsibility for helping people understand the risk of T2DM and coach them on preventative measures. Tevita recommended that learning needs to be mahu’ingamalie (meaningful) and convincing and needs to involve the

family. He recognises that knowing risk profiles for T2DM is important in encouraging healthy lifestyle changes at home.

'Ilo 'a e nunu'a kovi 'o e Suka - Diabetes complications awareness programme

Diabetes complications should be explained to all Tongans with T2DM and family members. Group talanoa participants wanted programmes to focus not only on T2DM management, but also on prevention measures for both T2DM and for secondary complications. A diabetes awareness programme should define supporting roles and what everyone can do to help prevent the development of T2DM and diabetes complications. Participants identified kidney disease as a severe and life-threatening diabetes complication for Tongans with T2DM.

Semisi shared information he learnt from a Tongan community radio programme. Dialysis is affecting younger people with diabetes, as young as 24 and 25 years old.

Semisi *Ko e tu'unga kovi, he 'oku 'alu pe 'aho mo e lahi ange 'a e kau dialysis.*

English *This is bad, as days go by, more people are in dialysis.*

(Male, Non-diabetic, Church Minister, Group 1)

Semisi drew attention to the growing number of people he knows with diabetes who are now needing dialysis. This in itself is a call for action. Diabetes awareness programmes need to engage people in such a way that they become aware of the need for the prevention and early detection of diabetes complications.

Patiola believed that diabetes is a serious and deadly disease, and that the Tongan community needs to be aware of it. She suggested that a trip to a hospital dialysis unit could be a wake-up call for people with diabetes.

Patiola *Ko 'eku sio atu ki he 'enau kai pola, 'a e matolu tu'u mai 'a e ngaahi fu'u konga talo, ngaahi fu'u konga 'ufi. 'Oku faingata'a, he'ikai te nau lava 'e kinautolu 'o ta'ofi e kai.*

'Oku ou tui au ia, 'oku totonu ke 'ai ha fo'i tour, ke nau 'alu 'o a'u tonu ki he dialysis. 'Oku ou tui, ko 'enau kamata hu pe he matapa, ki he nanamu 'o e dialysis, 'ikai te nau toe fie suka kinautolu ia.

English *I observe diabetic food intake at feasting, the thick big pieces of taro and big pieces of yams. It is hard, they will not be able to stop eating.*

I believe that we should organise a tour, to visit the dialysis unit. I am sure as they enter, smell the dialysis, they would rather not be diabetic anymore.

(Female, Non-diabetic, Health Professional, Group 3)

As a health professional working at the hospital, Patiola has seen it all. Most probably she has come across church and community members at the dialysis unit. Patiola observes that Tongans with diabetes are tempted to consume starchy vegetables like taro and yams. Being part of the community ceremonial feasts, they enjoy the moment with the food in front of them. They may not think of their blood sugar level nor the risk of diabetes complications. Patiola believes that visiting a dialysis unit could motivate people with diabetes, or those at risk of getting diabetes, to have better food control and prevent the development of diabetes and diabetes complications. Learning by visiting and seeing a dialysis unit is a practical teaching approach for Tongan families and community.

Summary of recommendations for early identification of diabetes

The participants of the group talanoa recommended that Tongans need early screening for diabetes. They need a family-based programme. Diabetes screening should include Tongan people, including children, with a family history of diabetes, overweight and obesity. Participants believed these are the main factors that increase the risk of developing T2DM. Managing the risks can significantly delay the development of diabetes through lifestyle changes with healthier food practices.

This can be achieved through church-based, community programmes that focus on diabetes awareness and are offered across the lifespan, not just to older people.

Polokalama Fakafāmili – Family programme

Diabetes management needs to engage with the T2DM individual and their family and household. Lifestyle changes are complex and diabetes health care providers expect everyone to be responsible for their own diabetes management. However, participants recognised the importance of family members understanding in a way that enables

them to support lifestyle and behavioural changes. Diabetes diagnosed in one family member leads to changes in the whole family.

Tevita agreed that education about food should involve the whole family and household. He knows that parents and grandparents are caregivers for young children. They made decisions on food practices at home.

Tevita *'Oku mahu'inga hono ako'i 'a e ngaahi mātu'a mo e ngaahi kui, ke nau 'ilo 'a e mahu'inga 'o e me'akai. Ko e me'a ia te ne holoki 'a e me'a ko e suka. Ko e anga ia 'eku fakakaukau, ke ako'i mei 'api. 'Oku fiema'u ia ke ai ha polokalama ke ako'i 'a e ngaahi matu'a mo e ngaahi kui. Ko e ngaahi kui foki 'oku nofo mo e fanga mokopuna, nau kei iiki, ke nau hanga 'o ako'i kinautolu kei taimi, ke nau 'ilo 'a e me'atokoni totonu ke nau kamata ai.*

English *It is important to teach parents and grandparents about how important food is. That is what will reduce diabetes. That is what I think, to teach at home. We need programmes to teach parents and grandparents. Grandparents look after grandchildren; they are still young. They will learn in time to know what food to eat.*

(Male, T2DM, Support person, Group 1)

Tevita recognises the important role that parents, and grandparents can play in teaching the younger generations about healthy food. He is concerned about the importance of the collective commitment to reducing the risk of developing diabetes in the family. Perhaps, as diabetics, Tevita and his wife understand their grandchildren's risk of developing T2DM. Therefore, he wishes to encourage and guide Tongan families to minimise food choices associated with developing diabetes. Tevita recognises the important role that grandparents can play in teaching the younger generations about healthy food. Perhaps grandparents could share their personal lived experiences and be guides in ways to more effectively prevent T2DM. Grandparents could demonstrate and pass on collective knowledge from one generation to another generation. The significance of the family and the household is central to the health and wellbeing of Tongan people. With the passing on of knowledge about healthy food choices from a young age, Tongan people could be better equipped and guided with strategies to prevent the development of T2DM.

Polokalama Faka-Siasi/Feitu'u – Church/community-based programme

The New Zealand Government health services recognise the need to work with community groups who are at high risk of developing T2DM. The group talanoa emphasised it is essential to engage with kainga lotu (church community and use existing structures (fa'unga) and programmes (polokalama), instead of introducing new programmes. Diabetes awareness programmes must have a family focus and mo'ui lōtolu, a holistic approach, to support Tongans with T2DM.

Faka'ehi'ehi mei he suka - Diabetes awareness and prevention programme

Tupouta'anea welcomed the opportunity to conduct a nine-week pilot programme at her church. The diabetes prevention training programme was aimed at young children and their parents. One of the Tongan medical doctors and a diabetes service leader ensured that the programme highlighted the importance of the health and wellbeing of our young children. As children are treasures in the Tongan community, engaging with parents and caregivers will improve and sustain healthy lifestyle choices that can help prevent diabetes among Tongan people.

Tupouta'anea shared the training programme with the group.

Tupouta'anea *Ko e uike 'eni 'e 2 hono fakalele e ki'i polokalama 'i 'api Siasi ma'a e matu'a 'oku 'i ai 'enau fanau 'oku 'i he ta'u 2 ki he ta'u 4, 'oku nau sisino. Ko e feinga'i 'a e kau facilitators ke ako'i kinautolu ki he me'a 'e fafanga 'aki 'a e fanau. Hange ko e talanoa 'a Semisi, kuo a'u 'a e ta'u 9, 'o kilo ia 'e 41 mo 51 he taimi ni. Ko e 'uhinga pe 'o e polokalama, ke lehilehi'i pe suka. Ko e tokanga 'a e Toketa ke ako'i 'a e to'utangata ko 'eni, ke nau mahu'inga'ia 'i he mo'ui lelei. Ko ki'i pailate (pilot) pe 'eni 'o e ako uike 'e 9.*

English *We have been running now for 2 weeks, a progamme at church for parents who have children between the ages of 2 and 4 years old who are overweight/obese. Facilitators try to teach them about what to feed their children with. As Semisi said, 9-year-olds weigh up to 41 and 51 kg nowadays. The reason for the programme is to prevent diabetes. The doctor wants to teach this generation to take heed in good health. It is a nine-week pilot programme.*

(Female, T2DM, Church Minister, Group 1)

Tupouta'anea is proud that her church had the opportunity to run this pilot training programme. She sees the importance of family involvement and early intervention to

prevent T2DM. Tupouta'anea knows that, though the children are not diabetic, they are at high risk of developing T2DM, especially being Tongan (Pacific descent), overweight and obese children. Perhaps Tupouta'anea sees the benefit of a church-based training programme. She is most likely to commit her church to being a pioneer for community or church-based health policies designed to prevent diabetes and support healthy food practices. Tupouta'anea is recommending a kainga lotu church-based programme as a significant opportunity for a diabetes prevention and health promotion approach.

Tupouta'anea also believed that the pilot programme should involve everyone, as healthy food practices are for all age groups, diabetic and non-diabetic.

Tupouta'anea *'Oku 'ikai totonu ia ke fakangatangata ki he ta'u 2 ki he ta'u 4. 'Oku totonu ke 'omai pe ia, kapau 'e to e taha hake 'a e ta'u, pea a'u pe ki he kau suka, koe'uhi ke fai ha tokanga ki ai.*

English *The training programme should not be restricted to age groups of 2 to 4 years old. We should include everyone. If we increase the age group, we include people with diabetes as we need to take care of them too.*

(Female, T2DM, Church Minister, Group 1)

Tupouta'anea is hoping that the pilot programme can be extended to other church members as she is aware of the high risk of diabetes among Tongans. She sees the opportunity of engaging with the whole church and the benefit of a community programme that is accessible and convenient.

Polokalama Fakafonua ki he suka- Diabetes national campaign programme

Salome believes that the government should promote and support diabetes and wellness programmes for churches just like they do with the rheumatic fever national programme. As a health professional and church leader, Salome organised a health promotion programme at their church. She shared the successful outcome and the knowledge gained by Tongan families.

Salome: *Na'e 'omai e polokalama ki he rheumatic fever 'o fakalelei homau siasi. 'Oku tau sio leva 'oku mahu'inga mo aware 'a e tokotaha kotoa he ngaahi faka'ilonga mo e me'a 'oku hoko. Ko e taetae hake pe ha taha, 'oku aware 'a e matu'a ke nau ō 'o 'ave, kapau 'oku mamahi honau monga.*

English: *Last year, we conducted rheumatic fever programme at our church. It shows its relevancy, everyone was aware of signs and symptoms, and what to do. Once someone coughed, with parent's awareness, they took the child to the doctor especially if they have a sore throat.*

(Female, T2DM, Health Professional, Group 1)

Salome was involved with the Rheumatic Fever Prevention Programme and witnessed successful outcomes as church members learnt and applied knowledge for the prevention and treatment of rheumatic fever. She sees the opportunity to conduct similar strategies to reduce T2DM for Tongans in New Zealand. Salome is aware of what can and cannot work for Tongan church communities and wants to use her experience and organising skills to address T2DM. The solutions to T2DM lie within the Tongan community, hence her interest in promoting church based T2DM prevention programmes. As discussed earlier (see Chapter 5, Findings – Individual Talanoa), Salome learnt from her personal experience of a late diabetic diagnosis. She recommended improving access to diabetes services like screening programmes at churches and in high-risk community groups as an opportunity for early detection and timely treatment for T2DM in priority and high-risk communities like Tongans.

<u>'Apitanga ki he Suka - Diabetes camp</u>

During Labour Weekend, most New Zealand and overseas Tongan churches hold church camps to promote abstention from alcohol ('apitanga tapu inu kavamalohi). This is a common practice and it started when alcohol began to influence Tongan families in Tonga. However, participants recognised the need to change and focus on diabetes as a more relevant health problem for the church now. Diabetes can be incorporated into the church's existing health programmes and the group talanoa participants emphasised that it is a church health priority.

Mosese suggested that the church should focus on diabetes prevention and intervention instead of alcohol.

Mosese *Ko e tu'u ko é he taimi ni, 'oku tau 'apitanga kavamalohi. Ko e ha 'oku 'ikai 'ai ha'atau 'apitanga suka? Ta u 'apitanga ki he ngaahi me'a ko é 'oku palopalema he ngaahi 'aho ni. Mo'oni pe 'oku palopalema 'a e 'olokaholo, ka ko e suka, 'oku ne tamate'i 'a e kakai 'o e Siasi. 'Oua te tau nofo kitautolu 'o siofi e 'olokaholo, kae mate e kakai ia he suka.*

English *We currently have camp for alcohol. Why aren't we having camp for diabetes? We have camp to focus on matters that are today's problems. Though alcohol is a problem, but diabetes kills people of the church. We should not focus on alcohol while people die from diabetes.*

(Male, T2DM, Education & Cultural Leader, Group 3)

Mosese believes that alcohol is not the church's current health priority. He is aware that the church follows a traditional programme and suggests that it is time to review this for a more appropriate health programme. As a diabetic, Mosese sees the benefit of attending a church camp on diabetes rather than one on alcohol. He probably does not drink alcohol and knows that a lot of people at church do not drink alcohol. Mosese believes that church camp is a great opportunity to promote diabetes services with a context-based programme which is more useful for him and the church members who have diabetes. He knows church camp is a great opportunity to bring diabetes services to the community, one which is more accessible for the Tongan community and already part of 'what they do'.

Lākanga fakataki – Leadership roles

Church ministers are fundamental in the Tongan community. Participants suggested that a diabetes programme is in the church ministers' best interests.

Ifalemi believes that church and community leaders should prioritise diabetes. It is major health issue in Tongan community, and it should be everyone's business.

'Ifalemi *'Oku fiema'u ia ke tau ngaue fakataha ki ai. 'A e kau taki 'o e komiuniti, 'a e kau taki lotu. Ko e me'a 'eni ia 'e 'ikai ke to e 'ai ia ke fakata'eta'ekuha ki ai, 'oua 'e to e heuheu. Ko hono mo'oni 'oku fiema'u ia ke fai.*

English *We need to work together on this. The community leaders, the church leaders. This is not something that we can ignore, we cannot be uncooperative. The truth is, we need to do it.*

(Male, T2DM, Church Minister, Group 2)

Ifalemi suggested that T2DM should be a priority and leaders need to get involved, anticipating their community groups will give support. He wants to strengthen nofo ‘a kainga lotu, a whole community approach, building upon community and church leaders’ mana (power) and mafai (authority) to do something about diabetes.

Senolita agreed that a church minister should lead by setting a good example. She fulfils her fatongia (responsibilities) when her diabetes is well controlled.

Senolita *Kapau te ke mo’ui lelei, ‘e mo’ui lelei ai ho laumalie, te ke ha’u ma’u pe ‘o lotu. Ko e ngaue ‘oku fai’aki ‘a e mo’ui lelei.*

English *If you are healthy, you will have a healthy spirit, you will attend church all the time. Work needs good health.*

(Female, T2DM, Church Minister, Group 3)

As a church minister, Senolita firmly believes that being healthy is vital to fulfilling her fatongia (responsibilities and obligations). She understands that spiritual wellbeing is essential as the church relies on members’ commitments and obligations. She knows that church leaders need to be mo’ui lelei (well) in body, mind and spirt (mo’ui lōtolu) to participate in church activities and programmes. Senolita emphasised that church leaders need to demonstrate wellbeing, mo’ui lōtolu, and to actively role model and lead on wellness.

<u>Polokalama fakata’u - Church annual diabetes health programme.</u>

Saimone suggested that health messages should be part of church activities throughout the year. He shared with the group some information about the Seventh Day Adventist annual health week programme. Saimone believes that although it is a start, the one-week annual programme is not enough to promote health awareness and deliver diabetes programmes for the church.

Saimone *‘Oku ou sio atu, ko e ki’i uike ‘e taha he ta’u, ‘ikai fe’unga ia. ‘Oku fiema’u ha uike ‘e taha he mahina kotoa pe. Te u fakahu he’emau palani ki he ta’u fo’ou. Ko e mahina kotoa pe, ‘oku fiema’u ‘a e Health Awareness.*

English *I could see that one week in a year is not enough. We need a week in each month. I will include it in our annual plan for next year. We need a health awareness week in every month.*

(Male, T2DM, Church Minister, Group 2)

Saimone knows that church-based health promotion needs regular programmes. He probably realises that there are many topics relevant to Tongan church members which cannot be addressed in one week per year. Perhaps, as a church leader, Saimone is aware of church members' health needs and the high prevalence of T2DM and nutrition-related diseases. He knows that lifestyle changes need on-going support for sustainability. A monthly health programme will provide more opportunities for members' participation in healthy lifestyle programmes. Perhaps Saimone wants to use his personal diabetes stories to support other diabetic church members. He probably wants a church-based intervention programme to ensure a regular monthly health programme is more sustainable.

Tu'utu'uni/Lao fakasiasi – Church policy

At the group talanoa, Saimone shared the importance of translating knowledge gained from the health workshop into church policy. He believes that information on food and diabetes presented at their church annual health programme was a wake-up call for him. As the church minister, he challenged the church with these questions: "*What are we going to do for our church? If we love our children, what do we need to do? Are we going to ignore the important training information? The church must act!"*

Saimone was eager to tell group talanoa participants about the outcome of the church health programme for this year. The church council agreed to put healthy policies in place.

> *Saimone: Ko e kai kotoa pe 'a e Siasi, he'ikai ke toe hu ange ha me'akai kakano. Ko e ika pe 'oku faka'atā ki ai. Pea ta'ofi mo e fa'ahinga ki'i hina inu ko 'eni 'oku manako ai e fanau. Kapau ko e Siasi 'oku nau taa'i mu'a he mo'ui lelei, tau ako'i ke foki 'a e ngaahi family 'o fai e me'a tatau honau ngaahi 'api.*
>
> *English: For all church meals, there is no meat allowed. Only fish is allowed. Stopped all the small sugary drinks that kids like. If we are a health-led church, we demonstrate it for families to practice in their own home.*
>
> *(Male, T2DM, Church Minister, Group 2)*

Saimone advocated creating supportive environments like that described above to help make behavioural changes. He believes that written health policy supported by church leaders will bring about change. Saimone recommended that church-based diabetes

programmes need to translate nutrition knowledge into practice. Guidelines developed promote vegetarian meals with fish and no fizzy drinks at church premises. Perhaps everyone should promote the same principles and show support for long-term goals and behaviours.

Lao fakame'atokoni - Nutrition policy

Semisi also emphasised the need for sustainable church-based health promotion programmes. He introduced a "no sugary drinks" policy as part of health initiatives in the Auckland region. It was well supported but it was not sustainable. Semisi explained that the whole church needs to buy in, and everyone should promote the policy.

Semisi *Na'a ku 'osi fokotu'u 'e au 'a e "Tapu inu melie" he 'api siasi 'eni 'e ua. Sai pe ia, ka ne 'osi pe ha mahina 'e 6 ki he 9, kuo to e foki pe kakai ia 'o inu me'a melie.*

English *I started "No sugary drinks" at two different churches. It was alright, but after 6 to 9 months, people started to drink sweet sugary drinks.*

(Male, Non-diabetic, Church Minister, Group 1)

Semisi introduced healthy drinks at church premises. Perhaps it was a great idea, but the church was not fully committed to this nutrition policy. Semisi believes that creating supportive environments is essential to healthy lifestyles. Maybe he failed to engage with church leaders and key drivers at these two churches. Semisi wants diabetes services to include the "no sweets or sugary beverages" policy for church health promotion programmes. He probably needs to include meaningful information that connects with each church member's heart, mind and soul. All church leaders need to participate and continue to promote the nutrition policy, incorporate it into church policy and get everyone talking about the same message.

Salome agrees that all church members need to promote the same messages. She explained that she heard about a church initiative, promoting "safe drinking water" at a Tongan church in Māngere.

Salome *'Oku fiema'u e taha kotoa pe he Siasi ke ne 'ilo 'a e lao pe tu'utu'uni ko 'eni. Kapau te fanongo talanoa pe kita "'Oku tapu e inu melie he Siaisi Māngere". Kau kotoa e Setuata Fale, kau taki mo e memipa 'o e Siasi, he tala 'oku tapu 'a e inu melie. Ko 'ete 'alu atu ki he 'api Siasi, 'oku te 'osi ma'u 'e kita e fo'I tala ko ia. Pea te muimui ai pe ki ai. Ka 'oku 'ikai ke 'eke atu ia ki ha taha he Siasi, pea pehe mai ia, 'ok sai pe inu melie ia. Everyone should say, 'oku 'ikai ngofua e inu melie.*

English *You want everyone in the church to know about this nutrition policy. If I heard that "Sugary drinks is not allowed at Māngere Church" and everyone promotes the same policy, the Parish Steward, leaders, and church members say that sugary drinks are not allowed. When I go to that church premises, I already learnt about that church policy. I follow the policy. It is not that you asked a church member, then he or she said that sugary drinks are alright. No, everyone should say that sweet sugary drinks are not allowed.*

(Female, T2DM, Health Professional, Group 1)

Salome recommended that any nutrition policy should be promoted by everyone in the church. Tongans will respect the church policy and should not bring in food that is not allowed on church premises. Perhaps, with church-based programmes, nutrition policy should be made known to all visitors and displayed around the church, and it should be ensured that it is demonstrated all the time for people to follow.

Anga faka-Tonga – Tongan cultural values

Introduction

This is the third section presenting strategies that the group talanoa suggested are needed to support Tongans in the prevention or better management of T2DM. The theme for this findings section is Tongan cultural values and T2DM.

The New Zealand diabetes guidelines acknowledge that culture is important in diabetes management (Ministry of Health, 2015c). The general concept of culture represents the values and traditional beliefs of a group of people – Tongans in this study. Participants in the group talanoa, shared how culture influences personal decisions on diabetes management and food practices. They agreed that culture is not static but is constantly evolving and adapting. Therefore, some of the Tongan cultural values and traditional beliefs may no longer be applicable in the 21st century and in the environment of New Zealand society. The food practices that they grew up with in Tonga, in a family, church

and community context, may no longer be applicable. As Tongan transition into the New Zealand system, food cultural practices need adapting so they are fit for purpose: that of being Tongan in an Auckland, New Zealand, context.

Group talanoa participants acknowledged the traditional role and socio-cultural values of food in tauhi vā (maintaining relationships), faka'apa'apa (respect), mamahi'i me'a (honouring) and loto tō (humility). They also recognise some negative aspects of Tongan values of tauhi vā like siokita (selfishness), fakavaha'avaha'a (competition) and ta'efieto (pride and showing off).

In the following section, I present the group talanoa participants' recommendations for the adaptation of Tongan cultural values and traditional food practices to achieve mo'ui lōtolu, wellbeing of mind, body, and soul of people with T2DM. The challenge is to maintain the cultural values and principles to suit the socio-economic and Tongan cultural context of the Auckland, New Zealand's environment.

Tauhi vā - Maintaining relationships.

Tongan academic and researchers reinforces the central role and cultural value of vā within the Tongan society (Ka'ili, 2005; Koloto, 2017; Paea, 2015; Pale, 2019). Tongan people draw their sense of belonging from the quality of relationships (vā) within the social structure of nofo-'a-kainga, a greater collective that forms along lines of kinship and genealogy. Vā reinforces relationships with others as well as social and cultural connectedness. In this study, participants refer to famili (family) and this includes the nuclear who live in the same household as well as extended family (kāinga), church (kāinga lotu) and community groups (kāinga fakakolo/fakafeitu'u). They are an integral part of being Tongan (Kalavite, 2010; Koloto, 2017; Tu'itahi, 2005)

Participants recognise that we are living in a different and foreign society. It has its own values and Tongans try to accommodate and adapt to survive in a Western-dominated world. The Tongan core value of tauhi vā (maintaining relationships) is more meaningful for Tongan-born parents compared to their New Zealand-born children.

Mosese struggles to accept that his children do not tauhi ā to the extend he expected.

Mosese *'Oku fa'a ngalo foki ia 'iate au, 'oku kehe 'eku tauhi vā 'a'aku mei he fānau. Na'e fanau'i nautolu 'i he fonua muli ni. 'Oku 'ikai ke nau tauhi 'e nautolu 'a e vā, 'oku ou mahu'inga'ia ai.*

English *I sometimes forgot that my way of maintaining relationship is different with my children's. They were born in this foreign country. They do not maintain the relationship, the one that I value.*

(Male, T2DM, Cultural leader, Group 3)

Mosese as a cultural leader wish his children recognise the importance of tauhi vā within the Tongan social structure of nofo 'a kainga. Perhaps as a leader, he is responsible to look after (tauhi) his fatongia (responsibilities), to protect and serve members of the Tongan community. Mosese probably wants to remind his children that as a father, a Tongan cultural and community leader, there is an expectation from the Tongan community to tauhi vā, and he needs commitment and support from his family. As Tongan academic and research Koloto (2017) emphasized, tauhi vā is a reciprocal activity whereby the persons involved will give each other time, food, and other material things as a sign of their respect of the vā.

In the following section, I focus on group talanoa participants' recommendations in terms of the cultural values of food, exchange, and gifting in relation to Tongan cultural events within a New Zealand context.

Kai Pola/Feasting – Me'akai/Food replace my money (cash)

Group talanoa participants recognised the integral role of food and feasting in Tonga and in New Zealand too. A Tongan feast may serve up to 20 different dishes. Traditionally, a basket of food known as "green basket" is presented to the church minister and/or guest of honour as their inasi (entitlement). A basket of food acknowledges and honours the presence and services of the church minister and guest of honour. The green basket may contain a spit-roasted suckling pig with many varieties of small dishes from each of the different dishes served on the pola (feasting table).

In the group talanoa, Patiola shared that she thinks church leaders continue to support feasting and the green basket. She proposed replacing the "green basket" and giving money as the gift for the church minister and guests.

Patiola *'Oku tau ngali fakakata foki he green basket, ka 'oku 'alu ia 'o pehe, ko e me'a ia 'oku nau kei piki ai he ngaahi pola, ko e green basket. Ka 'oku 'ikai ke nau 'ilo 'e nautolu ia, 'oku liliu'i hake pe 'a e green basket ia 'o money, 'o sila ia. 'Oku 'ikai ke toe fu'u fiema'u ia ke toe fai ha ngaahi fu'u me'a pehe, fu'u pola mo e green basket.*

English *We tend to joke about the green basket, but it looks like that is why they hold on to feasting, as of the green basket. But they do not realise that we can change the green basket to money, an envelope. We do not want to continue with such practices, the feast and green basket.*

(Female, Non-diabetic, Support person, Group 3)

Patiola respects the cultural principles of gifting and the sharing of food. It is an integral part of a Tongan traditional event. She probably sees that basket of food as no longer appropriate, especially as people tend to eat good food at their home. Maybe, with food insecurity, Patiola sees the benefit of giving cash instead of food. She respects the cultural values of feasting but appreciates the benefit of giving money (cash). Perhaps Patiola wants to encourage Tongans to make changes, adapt and modify the culture to fit in with New Zealand society and improve their own health. Money can be more useful than the excess food supply which leads to poor T2DM control.

Me'a'ofa (Gift) – Money (cash) instead of pig

Group participants acknowledged how food and materials are ranked in Tongan culture. Puaka (pig or pork) is the most prestigious among Tongan animals (meat). It plays a significant role in Tongan cultural events like funerals, birthdays, weddings, and various church events. Pig is used for gifting, food trade exchange, feasts, and special family meals. Participants recommended that, in tauhi vā (maintaining relationships), money can replace the pig, in honouring guests and important people at the occasion. These include but are not limited to church ministers, nobles, royalty and other family and personal guests at Tongan cultural occasions. They believe that money is more appropriate within Tongan culture in a New Zealand context.

As Salome shared with the group talanoa participants:

Salome *'Oku 'ikai to e 'aonga e ngaahi fu'u puaka ia heni. 'Aonga ange 'a e sila ia. Tau pehē 'oku pa'anga 'e $500 e puaka, 'e fiefia ange e fahu ia pe Faifekau ke 'oanga 'a e $500.*

English *Those pig is no longer useful here in New Zealand. An envelope (cash) is more useful. If we say the pig cost $500 dollars, the aunty (fahu) or minister would be happier with the $500 cash instead, it is more useful.*

(Female, T2DM, Health Professional, Group 1)

Salome believes that the principle of giving, and gifting can be maintained but the use of money is more appropriate and useful in the current environment. As a person with T2DM, perhaps she would rather receive money instead of a pig. Maybe Salome is trying to avoid eating pork as it is not good for her diabetes control. She understands and values tauhi vā, maintaining relationships, and sharing but she believes that pig/pork is not culturally safe and appropriate in the New Zealand environment.

Adapting feast – 'Ikai ha puaka (Without pig)

Participants discussed the changes that are already happening led by one of the Tongan churches. They acknowledged the transformational leadership at the church, with the President, the top authority and leader, advocating avoiding catering for pig at church feasts.

Sione learnt from his friends, relatives, and members of this Tongan church that members can fulfil their responsibilities (fatongia) without providing a pig.

Sione *Ta ko é 'oku lava pe e feilaulau ia 'o fai lelei'i ta'e 'i ai ha fu'u puaka ai. Ko 'emau toki a'u 'eni ki he fo'i maama ko ia.*

English *Surely, we can put up a good feast without a pig. We have experienced this light.*

(Male, T2DM, Church Minister, Group 3)

Sione recommended that if one church can make changes to Tongan feasting, then this should be adopted by other churches and the wider Tongan community. He uses maama (light) to explain this new discovery and learning. Sione knows that having a feast without a pig is part of transitioning to New Zealand society. Perhaps, as a church minister, he believes that they can take leadership in making this cultural adaptation.

The group talanoa recognised cultural value of food in fulfilling fatongia (duties), faka'apa'apa (respect), mamahi'ime'a (honouring) and mo'ui vahevahe (sharing). In the Tongan and Pacific world, me'akai (food) plays a very important role in our daily activities ('Ahio, 2011; Mahina, 1999; Pollock, 1992). It connected with our sino, physical body, in fulfilling our duties in serving and honouring others. The production of food, giving, consumption and exchange is part of the communal and collective living of Tongan and Pacific communities.

Summary

This chapter presented findings from the three group talanoa held with 17 Tongan church and community leaders. Thirteen participants had T2DM and four did not have T2DM. Group talanoa made recommendations and suggestions about strategies that can help to prevent diabetes and support people with T2DM for better diabetes management and food practices.

All participants recognised the importance of mo'ui lelei (good health) and mo'ui lōtolu, wellbeing of sino (body), 'atamai (mind) and laumālie (soul/spirit). In dealing with long-term conditions and complex diseases like T2DM, meaningful, practical, and appropriate information is essential for diabetes management and food practices. Participants recommend that learning and education should aim to connect with the heart, as it is the centre of authority. Participants agree that knowledge will transform into action when the heart and mind are connected. Tongan people with T2DM need to believe, accept, trust information, and take responsibility for achieving good health and wellbeing.

Group talanoa also recognised the high-risk profiles of Tongan families with diabetes. They recommended there is a need for family, community and church-based screening and diabetes prevention programme. The challenge is to determine the types of diabetes education and training programmes that are likely to support Tongans with T2DM towards better management of diabetes and food practices. Participants recommended a holistic approach and the importance of maintaining relationship, tauhi vā and helping people with T2DM to achieve good diabetes control, a reciprocal benefit to family, church, and Tongan community. Traditional role and socio-cultural values of food in tauhi vā (maintaining relationships), faka'apa'apa (respect), mamahi'i me'a

(honouring) and loto tō (humility). ‘Ofa (love) and Loto’ofa (heart with love) strengthened and weave diabetes management and food practices.

Chapter 7 Discussion and Conclusion

Luke 10: 27 Pea tali ‘e ia ‘o pehē’ Te ke ‘ofa ki he ‘Eiki ko ho ‘Otua, ‘o fai’aki ‘a e kotoa ‘o ho loto, mo e kotoa ‘o ho laumālie, mo e koto ‘o ho ivi mo e kotoa ‘o ho ‘atamai; pea te ke ‘ofa ki ho kaunga’api ‘o hangē ko ho’o ‘ofa kiate koe’

Luke 10:27 He answered “Love the Lord your God with all your heart and with all your soul and with all your strength and with all your mind’ and, ‘Love your neighbor as yourself’.

Introduction

This study explored the experiences of Tongans with T2DM in Auckland, New Zealand. I was reminded afresh that Tongans live with family within a household and are likely to attend church on a weekly basis. They stay connected with kāinga, extended family, relatives, and friends from church, and with the community in the region, back home in Tonga and worldwide. Living with their diabetes connects them with New Zealand (NZ) health care on the assumption that their diabetes will be successfully ‘managed’. It became clear through this research that the meaning of food in the lives of the Tongan people in this study is deeply complex and enmeshed in their experience of daily life. I began to itemise the various factors that influence a Tongan person’s ability to keep their diabetes under control but came to see that such an approach draws me back into a Western model of health where mind, body, and soul are separated out, and the influence of family, church and community are most often ignored. I recognised that to make a difference to Tongan people with T2DM, we need to understand the meaning of food for them and what having a diagnosis of T2DM means.

The purpose of our research was to find out:

i. What is the meaning of being Tongan with T2DM in New Zealand?
ii. What are the factors that determine food practices of Tongan people with T2DM in New Zealand?
iii. What can we do to help Tongan people with T2DM better manage their diabetes?
iv. What strategies can help improve food practices and diabetes management of Tongan people with T2DM in New Zealand

In this chapter, I will firstly summarise the focus of my research and the key findings. Then I will examine and weave these within the context of existing knowledge to advocate for the way forward with how the Tongan community and health services work together to support Tongan people with preventing or managing T2DM.

The participants' stories, talanoa (told) that the meaning of food for a Tongan with T2DM must be considered from a holistic perspective to encompass mo'ui lōtolu. The three essential and inseparable aspects of wellbeing in sino (body), 'atamai (mind) and laumālie (soul/spirit) within the family, church, and community context. As soon as I separate out the strands, I lose the essence of what I am trying to say. That is, that a Tongan person with T2DM lives amidst complex tensions, which pull, constrain, encourage, inspire, limit, and frustrate. Tongan perspective that spirituality is central, and wellness does not exist without all parts, the spirit, body and mind at tā (time) and vā (space) or environment (Bloomfield, 2002; Ihara & Vakalahi, 2011; Mahina, 1999). It is what must be appreciated in every situation.

Mo'ui lōtolu: Wellbeing in sino (body), 'atamai (mind) and laumālie (soul/spirit).

To keep the 'whole' amid the context of life experience, I have chosen to imagine a story. This story is based on participants' stories plus my own lived experiences and keep it within my research framework of talanoa (Vaioleti, 2006, 2013; Vaka et al., 2016) and hermeneutic phenomenology (Smythe, 2011; Smythe et al., 2018). I have called the person Salote and use this story to summarise the findings from individual talanoa, which demonstrate how a Tongan with diabetes lives, showing the everyday things that matter to him or her. I strive to keep alive the notion of Dasein, 'Being-in-the-world' (Heidegger, 1962), as a Tongan with T2DM in New Zealand. The dynamic of Tongan mo'ui, life is all about being with others, relating to each other in the moment, the things that matters and affect one's everyday life. The story seeks to address the things that matter to Salote, in the hope that I weave together and address the holistic approach for the Tongan with T2DM.

> *Salote wakes up one Monday morning and thinks about her diabetes (suka). She knows that the doctor wants her to test her blood sugar level on a regular basis. She asks her husband to get her testing meter. She tests her blood sugar, and it was 13. She knows that is high, as*

her doctor wants her to keep it below 10. Salote regrets and wishes that she did not eat those foods at the feast at church yesterday. She tells her husband, that she is not happy that her blood sugar is so high. Her doctor will not be happy with her blood sugar level. Salote thinks of what she is going to have for breakfast. She does not want to eat. She fears increasing her blood sugar further.

Her husband calls her to come and have breakfast with him. Salote tells her husband about the sugar level being high. He says that she still needs to eat breakfast. To keep her husband happy and appreciate the breakfast, she eats with him. As she blesses their food, it prompts her attention on food in nourishing her physical body in order to fulfil God's will and her daily responsibilities. Salote knows that her food choices could be better. She keeps thinking and talking about the food she ate at church yesterday, blaming the people for giving her too much food and food that she should not eat. She thinks about how she can make the people at church understand that she struggles with her diabetes. Salote takes her diabetic tablets (oral hypoglycaemic agent) with her breakfast and tests her blood sugar two hours after the meal. She does what her doctor and nurse reminded her of, knowing that they expect her to keep it below 10. She is worried about her diabetes and does not want to get growled at again or disappoint them.

As a church minister, Salote stays home, as Monday is a resting (off) day. Throughout the day, she thinks about her family. The kids have gone to work, and her husband has gone to the shop. He does not want to cook. He usually brings some takeaways for lunch. Salote prefers a homemade meal, but she ends up eating high fat (lūsipi – taro leaves cooked with coconut cream and mutton flaps) high carbohydrate Tongan food (taro and cassava) that her husband brought home. Salote enjoys having lunch with her husband. Yet, she is conscious that too much Tongan food would worsen her blood sugar. Salote tells her husband that he is not helping with her blood sugar. She is worried about her kidneys, as she does not want to end up on dialysis.

Salote thinks about her sister, aunty and uncle who have got diabetes too. Even though they have diabetes in the family, no one really talks about it nor follows any diabetes meal plan. She remembers one of her friends at church shared her personal story of having diabetes. She said that she could eat whatever she wants to eat which keeps her happy. Salote thinks that it is depressing looking after her food intake. It seems others may eat similar or the same food, but their blood sugar test is normal, better than her blood sugar level. Salote prays about how she is struggling with her food choices and blood sugar levels, believing that God will help to improve her blood sugar and keep her safe from diabetic problems (complications).

Salote's diabetes control is affected by what her family eat at home. Everyone eats the same food, nothing special for her as a diabetic.

She says "It is up to me to take control, to have the will power and ability to say No. But how can I say 'No' when everyone else enjoy eating". It is the joy of eating together that she most values.

She tells me: "I remember when I grew up in Tonga, my mum had diabetes. We, as children, prepared and cooked her food. There was separate food for her in a different pot, no coconut cream, no taro, or cassava. She mainly ate banana (boiled) with fish (grilled or boiled) with la'ipele (hibiscus leaves). She did not test her blood sugar at home, as there was no glucometer. I think that not knowing her blood sugar level was less stressful. She felt fine and well in herself. She found out her blood sugar level when she went to see the doctor at the hospital outpatient clinic. That was once in three months or a longer period. I remembered her taking different types of tablets. None of us understood why she was taking them apart from being tablets for her diabetes. Every one of us in the family were responsible for cooking her food at home and making sure it was healthy, no added sugar, salt, or fat. There were no takeaways and not many feasts at church. However, here in New Zealand, my children are busy at work and school. My husband is my support person; he prepares our meal and makes sure that I take my tablets. He does not really understand my blood sugar level nor the different types of tablets that I am taking. There are so many different sorts of food available. It is up to me to make choices, which is hard especially as other food looks delicious and tasty. In Tonga, we did not have choices apart from the basic foods. We used to get our food (staple) from our own plantation (allotment). Here in New Zealand, we need to buy food from the supermarket, fruit and vegetable shop, flea market and dairy. Food costs money and is expensive. In Tonga, the only food that we needed to buy was meat (mutton flaps, corned beef, and tinned fish) and dairy food (milk, butter, and cheese). These were imported/western foods that we rarely bought, as we could not really afford it. In New Zealand, food is readily available, and we need to buy everything, the vegetables, fruit and Tongan staple food as well."

She sighs. Salote is an educated woman committed to looking after her diabetes but at every turn that seems hard. She is at a loss to know how to do better.

If Salote was asked to list the various dimensions that are part of her daily struggle of living with T2DM, trying to achieve **Mo'ui lōtolu**, wellbeing in body, mind, and soul/spirit, the list might look like this:

Mo'ui Fakasino/My Lived Body

T2DM puts a focus on my lived body, especially in terms of what I eat, what medication and treatment I am taking, how that affects my blood sugar level and how it affects different parts of my body.

Anga ‘eku Ongo’i/My Lived Mood (Emotional)

How I am feeling about myself, and my situation influences how well I control my food, blood sugar level and when I need to seek medical services.

Anga ‘eku Kai/My Lived Food Intake

Habits about what got given to me to eat and how much I choose to eat mean I tend not to stop and think about what I am eating in terms of my diabetes.

Mo’ui Fakafāmili/My Lived Family

Who cooks, who buys food, who supports, who understands makes a big difference in what I eat.

Mo’ui Fakasiasi/My Lived Church

There are so many expectations around feasts, what to take, what to eat. Once you are there you feel obliged to honour and appreciate people by eating the food they have brought. It is disrespectful (ta’e faka’apa’apa), unappreciative (ta’e hounga) or considered sio lalo (looked down) if I do not eat with them.

Tui Fakalotu/My Lived Faith

My relationship with God, religious beliefs and values influences how I think and act. It gives me a deep trust that I am being somehow ‘looked after’. Perhaps I do not take enough self-responsibility, leaving too much up to God.

Anga Faka-Tonga/My Lived Tongan Culture

I am Tongan, that is very important to me. I cannot “Not be Tongan” in my ways. It is who I am and how I related to others, my sense of identity and point of connection with Tongans.

‘Ātakai (Feitu’u)/My Lived Space

I live in Auckland, New Zealand, and the food environment, government policy and regulation, influence what I can eat, afford, and do.

Pule'anga mo e ngāue Fakafaito'o/Government and health care services

My relationships (vā) with the health experts, doctors, nurses and people who guide and watch over my diabetes tends to be about me wanting to please them. They sometimes growl at me, but they do not help me find ways to help me improve my eating habits. I do not want to disappoint them.

Tukupā ke Liliu/ My Lived Commitment to Change

How much am I prepared to address the complex interweaving of issues to make change? That seems to depend on the shared commitment of those who eat alongside me.

Having pulled out these strands they must now be woven back into the dynamic whole. One strand is always influenced by the nine other strands. No one strand represents lived experience. It is always about **Mo'ui Lōtolu**. Thus, any approach to working with Tongans with T2DM needs to find ways of keeping the dynamic whole within the story of 'how it is'.

The way forward

As presented in Chapter 6, the group talanoa focused on ways of improving the situation for Tongans with T2DM. Participants in the group talanoa shared the importance of feeling well, having no illness and being able to fulfil fatongia (obligations and duties). Tongan social structure, culture, and the way we live in this society defined our roles, values and influences our behaviours as reported by Tongan researchers (Fakahau, 2020; Ka'ili, 2005; Koloto, 2017; Tu'itahi, 2005; Vaka, 2014).

The group talanoa recognised and appreciated the traditional role and socio-cultural values of food in fulfilling duties and obligations, tauhi vā (maintaining relationships), faka'apa'apa (respect), fakalangilangi (honouring), hounga'ia (reciprocity) and loto tō (humility). These cultural values communicate 'ofa (love) and food is a way to love, honour, thanks and appreciate others. This is aligned with findings from other studies with Tongan and Pacific communities (Dearie et al., 2019; Shahab et al., 2019)

The Tongan cultural values and traditional food practices to achieve Mo'ui Lōtolu, the wellbeing of sino (body), 'atamai (mind) and laumālie (soul/spirit) of Tongans with

T2DM. Participants talanoa about how 'being-Tongan-in-Auckland' influences diabetes management and food practices. The challenge is to maintain the cultural values and principles to suit the socio-economic and Tongan cultural context of the Auckland, New Zealand environment.

Group participants talked about the food practices that they grew up with in Tonga, in a family, church and community (village) context may no longer be applicable in this time and space especially with T2DM epidemic. They believed that as Tongan's transition into the New Zealand system, food cultural practices need adapting so they are fit for purpose, that of being Tongan in an Auckland, New Zealand context. As Mosese, a Cultural leader and participant of group talanoa told the group *"Ko e sosaieti muli 'eni 'oku tau 'i ai, 'oku 'i ai ngaahi values 'o nautolu" ("We are living in a foreign society, with its own values").* Group talanoa participants agreed Pulotu-Endemann and Faleafa (2017) and Butt (2002) reports that culture is dynamic, constantly evolving and adapting. Therefore, some of the Tongan cultural values and traditional beliefs may need adjustment to be applicable in the 21st century and in New Zealand society's environment. It has been reported by other Tongan researchers ('Ahio, 2011; Mahina, 1999; Vainikolo et al., 1993).

Group talanoa participants acknowledged the importance of learning and gaining knowledge through traditional method talanoa, sharing stories, talk and exchange of ideas. Tongan and Pacific scholars and researchers in Tongan (Havea et al., 2021) and Pacific peoples support this (Akbar, 2017; Cammock et al., 2021; Fakahau, 2020; Fehoko, 2020; Vaioleti, 2006; Vaka et al., 2016). Group talanoa participants offered recommendations for the adaptation of diabetes services and learning about diabetes. They believe that diabetes management is about accepting and taking responsibility, receiving practical and meaningful information, transforming knowledge into action, and involving family, church, and community.

As a forward-thinking approach, I now imagine Salote's story in two years' time, with the recommendations from the group talanoa integrated. This revised version of her story signals how her life could be:

> *Salote wakes up on this Monday morning feeling refreshed and happy in herself. She tests her blood sugar level, and it is seven (7). She is happy that she continues to keep it below 10, as her family doctor*

advised. Salote is thankful that she did not eat too much at the church feast yesterday. She was very impressed with the variety of healthy food options available, and she did not feel pressured to eat too much. There were foods she loves eating and familiar food that she eats at home. No high fat food fried or cooked with coconut cream, no puaka (pigs) nor any fizzy drinks. There were lots of vegetables salad, potatoes, fruits, and seafood. Salote is happy that church members have put into practice the nutrition knowledge gained from their diabetes training delivered earlier this year. Both Salote and her husband shared their views (talanoa) about the changes shown in church feast. A true reflection of knowledge transformation is that church members now take pride in providing a variety of healthier options in the feast, creating an environment that supports good food practices for people with diabetes.

Salote joins her husband for breakfast. She is happy that her blood sugar was within the normal range. Salote tells her husband that waking up with a good blood sugar level is a great start to her day. They both enjoy breakfast and as she blesses their meal, she is grateful for the love, support, and provision of appropriate food for her diabetes. She believes that her food choices will help honour God and help her fulfil her fatongia (duties). Salote does not worry about checking her blood sugar two hours after her meal. She feels well and believes that her diabetes is under control. Salote thanks her husband for being able to support her with food choices, which benefit the whole family. Their children attended the nutrition church workshop and are well informed of what is good for everyone in the family. Everyone in the family is now in full support. Her husband gained knowledge about food that is good for diabetes, and the types of medication she is taking. It feels great to get everyone in the family on the same page.

Salote is very happy that the doctor has stopped one of her diabetic tablets (oral hypoglycaemic agent). She had excellent glycaemic control, lost 10 kg, and was pleased that she maintained good blood sugar level over the year. She is now confident and happy with her diabetes management plan in place. Salote told me that once she learnt she could come off diabetic tablets, she made it her personal goal. The doctor and nurse were happy with her good blood sugar level. It was much easier when the whole family, her church and friends were eating the same food, as they have learnt that what is good for a diabetic is good for everyone else. A supportive Tongan family and community to achieve her personal diabetes management goal and mo'ui lōtolu.

Salote feels some stress has gone, as she knows that maintaining a good blood sugar level has reduced her risk of getting diabetic

problems (complications) especially kidney failure. She is very impressed with the changes at church functions and at her home. Salote does not feel pressure to eat what she does not want or need to eat or drink. The kids help with food preparation and the family rarely eats any takeaways. They realised how much money they have saved from avoiding takeaways. Her husband planted a vegetable garden and fruit trees in their backyard. He attended a gardening workshop and is very happy that he can do his own garden, proudly producing fresh organic fruits and vegetables which they share with friends and relatives. Salote's husband has become a much better cook, trying new healthy recipes with enthusiasm. Salote reflects on what she used to do for her mother in Tonga. She is happy that some of those old ways have come full circle, back to basic homegrown food, with the whole family sharing responsibility for what she is given to eat.

Salote is looking forward to seeing her doctor. Last visit she asked her to talanoa with some other Tongan people who had just become diabetic. She told her to tell them her stories of how she and her family had all improved their food and health. Other people in the group came up with some stories of their own. She thanks God for the knowledge and wisdom gained, and the courage to transform and put new healthy eating habits and food choices into practice. She feels well, mo'ui lelei (good health), in her body, mind and soul. She is satisfied that she now fulfils her fatongia (duties and obligations) for church, community and her family with energy and enthusiasm. She knows that she needs her family, friends, church, and community to help achieve Mo'ui Lōtolu.

The way to make changes.

The group talanoa participants' stories demonstrated that learning is intended to ensure understanding, reflection on lived experiences and the building of confidence in transforming knowledge into culturally safe diabetes management and food practices for Tongan people with T2DM. It is widely recognised that knowledge alone is not sufficient to induce behavioural change (Bell & Swinburn, 2015; Cassel & Boushey, 2015; Manu'atu, 2017). Delivering effective dietary advice for people with T2DM goes beyond supplying information and addresses the behavioural and psychosocial determinants of health (Dyson, 2019). As described by Tongan scholars, the concept of ako (learning) is about gaining mahino (understanding) and putting 'ilo (knowledge) into practice is poto (wise) and fakapotopoto (sensible/prudent) (Manu'atu, 2003, 2017; Thaman, 1997; Tu'itahi, 2005). In the context of my study, supporting learning means having a genuine

interest in people, establish and maintain authentic relationship (vā) with open interactions (talanoa), and practical demonstrations to allow people to be informed and supported for sustainable behavioural changes. This is aligned with Tongan research in the education and health field ('Ahio, 2011; Havea et al., 2021; Kalavite, 2019; Pale, 2019; Vaka, 2014).

The changes that are revealed in this imagined story of the future are about:

Fiema'u e tokoni 'a e fāmili (Recognising that managing diabetes is a family responsibility)

Participants' stories revealed that the person with T2DM relies on family support to adopt diabetic healthier food choices and make dietary changes for family. This is aligned with Moata'ane et al. (1996) findings that educating an individual with diabetes is ineffective, as a Tongan person is always part of a family, and needs whole family support. Engaging with the family is also supported by the Ligita et al. (2021) study of Indonesian people with diabetes that investigated how patients learn about their disease. The grounded theory study used semi-structured interviews of people with diabetes, family members and health care professionals. They found that engaging with family was integral to people living with diabetes as family members assisted with diabetes management. Health care professionals can provide education to the person with diabetes and their families. My study is also aligned with Kaufusi's (2020) doctoral study of dietary experiences of Tongan Americans to explore the barriers and facilitators to healthy dietary behaviours. This doctoral study found that the home environment and availability of unhealthy food is one of the barriers to adoption of healthy dietary behaviors among Tongan Americans. This is important, as the home environment is where the learning and transmission of cultural and family beliefs around dietary behaviours is discussed. Furthermore, the qualitative descriptive study by Bennich et al. (2020) in Denmark used a semi-structured questionnaire to investigate the experiences of family function and its importance in diabetes self-management of 20 adults (11 men and 9 women, mean age 69 years old) with T2DM. This study found that participants downplayed the management and avoided discussing diabetes with family to maintain cohesion, wellbeing, and the perception of normal family life. Participants also choose to control diabetes with medications rather than lifestyle changes to maintain their family lifestyle cohesion. Abbasi-Ghahramanloo et al. (2020) cross-sectional study in

Neyshabur north-east Iran found that having household food security were associated with good health related quality of life. Our study and the literature confirmed that the health professional, and the diabetes provider need to engage with people with T2DM and their family. Family need education and advise to understand the nature of diabetes and its management so they can support family member' with lifestyle changes, healthy food practices as the new normal family life.

Fiema'u 'a e tokoni 'a e siasi (Recognising that managing diabetes needs church support)

Study participant's stories show the role of church in the lives of Tongan people. It provides a sense of community and belonging for many Tongan families. Church can be a social institution where hierarchical, religious beliefs and Tongan cultural values are practiced. Participants' stories emphasised that life at church is easier in a supportive environment for people with T2DM when they are not encouraged or tempted to eat food that is not helpful to their diabetes management. It aligned with several studies of church-based health programmes with Tongan, Samoan and other ethnic groups in New Zealand, Australia, United States and Pacific regions (Brown et al., 2019; Campbell et al., 2007; Dutta et al., 2019; Milstein et al., 2020). The impact of health promotion, diabetes prevention and intervention programmes in churches involved improvement in health and wellbeing, health behaviours - especially nutrition and the uptake of physical activity. Parks et al. (2020) conducted a diabetes prevention programme (DPP) in a Samoan/Tongans faith-based group in Southern California. The study identified the church could be a resource for positive health outcomes by harnessing cultural traditions and addressing cultural values and awareness about a healthy lifestyle. My research adds to these findings with specific strategies from the group talanoa on how to make these changes at church by advocating healthy feast foods and the donation of money as a gift of reverence, rather than the donation of unhealthy foods.

Ngaue'aki 'a e 'ilo (Knowledge is essential for making changes)

The participants in our study talanoa about how gaining knowledge and skills builds confidence in making the behavioural changes that benefit everyone. This is aligned with Taumoepeau et al. (2021) findings from a qualitative study, exploring lifestyle factors that influenced diabetes management of 16 Tongan adults with T2DM in Tonga. The

participants acknowledged education information learnt through the hospital's specialist clinic helped with diabetes management as they had minimal knowledge of the aetiology of T2DM prior to their diagnosis. They also gained knowledge about dietary information and the impact of food intake on diabetes control. The knowledge translation was successful in Taumoepeau at al's study because it was contextualised and presented in a way that is applied to everyday life by Tongans. The value of knowledge as stated by the founder of Tonga's Constitution, late King Gorge Tupou 1, "'E 'auha hoku kakai koe masiva 'ilo" - "My people will be destroyed for lack of knowledge" (Campbell, 1990; Prinicess Siu'ilikutapu Fotofili speech cited by Loloa-Wolff, 2015). This group talanoa in my study built on this by advocating that Tongans in leadership positions who have T2DM can contribute to this knowledge acquisition by being wise and able to role model, and demonstrate good changes, thereby transforming knowledge into action that leads to behavioral changes.

Mahu'ingamālie (Meaningful, coming to really understand)

Participants' stories shared about when Tongan people gather in their own familiar context for talanoa with people who have wisdom and experience in living with diabetes, they come to understand how they too could and should change their ways. This is similar with Vaka et al. (2020) study who explored the meaning of mental distress for Tongan men and community leaders in Auckland. The group talanoa provided context for participants to share their stories, allowed authentic voices of participants to be heard as they openly shared their stories. In addition, Fehoko (2020) in an exploratory study held of a group talanoa with Tongan born and New Zealand-born males in Auckland. Like my study, participants openly shared their perceptions and experiences of gambling and problem gambling in New Zealand.

Ongo'i fiefia (Feeling happy)

Our study participants shared about feeling happy, having a sense of belonging that a good family and church support is essential for diabetes control; one is happy when food and diabetes are well controlled, feeling good in body, mind and soul is "what matters". This is aligned with the Finau et al. (2004) review of various transitions that led to health changes in the Pacific. They recommended that measurement of health status should also measure wellness, satisfaction with life, and happiness. They believed the World

Health Organisation (WHO) definition of health as “a state of complete physical, mental and social well-being, and not merely the absence of or disease infirmity” (2006, p. 100) is ideal to the state of happiness (Finau et al., 2000; Finau et al., 2004). Furthermore, in my study, the study participants talanoa about feeling well and happy when blood sugar levels are within the normal ranges, along with a good relationship with health professionals, family and church is maintained. This aligns with Tongan quality of life, wellbeing, and harmony (Bloomfield, 2002; Mahina, 1999; Permana et al., 2019; Vaka, 2016)

Lotu (Prayer)

The participants placed great emphasis on the spiritual dimensions of health and wellbeing. Church leaders shared the impact of church feasting, gifting and ceremonial events on their diabetes management and food practices and diabetes. This is aligned with Leslie (2002) study. Furthermore, our study participants also talked about the importance of being a role model. When a person shows they are making changes in their food choices to support others who have, or are at risk of, diabetes, meaningful relationships grow based on trust, knowing that good diabetes control will help to fulfil fatongia and honour God. This is aligned with church-based health programme for Pacific peoples in New Zealand, Tonga, Fiji, Australia, United States and Pacific regions (Akbar & Women's Alliance, 2019; Baruth et al., 2015). Pacific Island communities in Australia placed greater emphasis on the social, family and spiritual dimensions of health and wellbeing (Akbar et al., 2015). Furthermore, in a study by Hopoi and Nosa (2020), standard health promotion interventions, supplemented with spiritual strategies, led to significant improvements in clinical outcomes and reduced risk for developing T2DM and other food related diseases.

‘Ofa (Love)

Our study participants’ talanoa that sharing foods with family, friends and others is the Tongan way to show ‘ofa and appreciation (hounga’ia). This is aligned with Leslie (2002) study in Tonga, he found food was the most frequent medium of ‘ofa, love and generosity to maintain good relationship. Our study participants’ talanoa shared that maintaining good diabetes control relies on an understanding of healthy fruits and vegetables grown in one’s own garden, and gifts suitable for people with diabetes. ‘Ofa

(love) is reported as the foundation of communal responsibility towards tauhi vā, maintaining good relationships (Kalavite, 2020; Ketu'u, 2014; Talakai-'Alatini, 2014). In Tonga, plates of food shared with neighbours on a daily basis with an increased intensity on Sunday meals was observed by Leslie (2002) as the Tongan way.

Culture (Anga Fakatonga)

Aligned with the above, the participant's stories in our study show being well, free from diabetes complications, able to attend church, doctors' appointments, and shared meals with family and church is part of being Tongan. Participants need support with being able to manage resources, food budget, and to provide the right amount and types of food for family and church gatherings. Being able to meet duties and obligations is closely tied with the happiness and harmony that Finau et al. (2004) and Tu'itahi (2005) described in their study findings.

Faka'apa'apa (Respect)

Family and church members take responsibility to support people with T2DM with food at home and church. Relationships are strengthened when support people respect the needs of the person with diabetes.

Tauhi vā (Maintaining relationship)

Participants emphasized the core value of vā (space), bind the collective, maintaining relationship and making connection with health services, famili (family) and kāinga (community) in New Zealand, Tonga and worldwide. Tauhi vā is an integral part of being Tongan (Ka'ili, 2005; Kalavite, 2010; Koloto, 2017; Pale, 2019; Tu'itahi, 2005). Tongan people draw their sense of belonging and collectively can make communal changes to the benefit of the whole community. This is aligned with Tongan academia and researchers' findings (Matapo & Teisina, 2021; Pale, 2019).

Concept of kato polopola

The complexity of diabetes management for Tongans, and the strengths of family, church, community, culture, and the collective approach to managing diabetes comes through clearly in the above integration of knowledge from this study with current published research. I have chosen the analogy of weaving coconut leaves (strands) to a

Kato Polopola, food basket, to demonstrate a way of keeping the dynamic whole. The idea arose from talanoa with participants in this study, fāmili, kāinga, friends, an expert advisory group and from personal reflection of my late father's commitment to tauhi vā, maintaining relationship, fua fatongia (fulfilling duties and obligations) in church, community and always acknowledging the cultural values of food.

The concept of kato polopola captures the Tongan worldview. The collective nature of Tongan culture and the compliment of tauhi vā, that of maintaining the web of relationships that surrounds a person with T2DM. Diabetes management requires a comprehensive understanding of the broader context in which food practices occurred, the collective influence at all levels, with an individual, famili (family/household), kāinga lotu (church), kāinga (extended family and community) with the diabetes health services. Kato polopola also acknowledges mo'ui lōtolu, talanoa, talking with other participants and weaving a holistic approach that is fundamental to wellbeing in sino (body), 'atamai (mind) and laumālie (soul), that recognizes the central role of the loto (heart) in accepting diabetes information, knowledge and being a Tongan with T2DM. Good diabetes management is not without its challenges. There is an emotional impact of diabetes management and food practices especially if people are unable to control one's blood sugar levels. That is the heart of the role of Tongan culture at present. This tā (time) and vā (space) in Auckland, New Zealand. This needs to be fully understood by healthcare and diabetes providers. The analogy of Kato polopola is shown on Figure 2.

In Tonga, kato polopola is a traditional basket made and weaved from coconut leaves. It is known to the most 'aonga (useful) and tōlanga (durable) basket for Tongans (Cocker, 2020). The new green basket usually referred to as the "green basket". It is solely to be used for 'umu (food cooked in earth-oven) and prepared food.

> *"Ko e kato mohu 'aonga mo tolonga taha eni 'a e Tonga. Ko 'ene kei mata mo fo'ou 'oku ngaue'aki ki he fa'o'anga 'umu mo e me'akai. 'I he'ene motu'a 'oku tuku atu ki tu'a ki he tufi veve mo e fakamaau 'api".*
>
> *(Cocker, 2020)*

Weaving a Kato Polopola

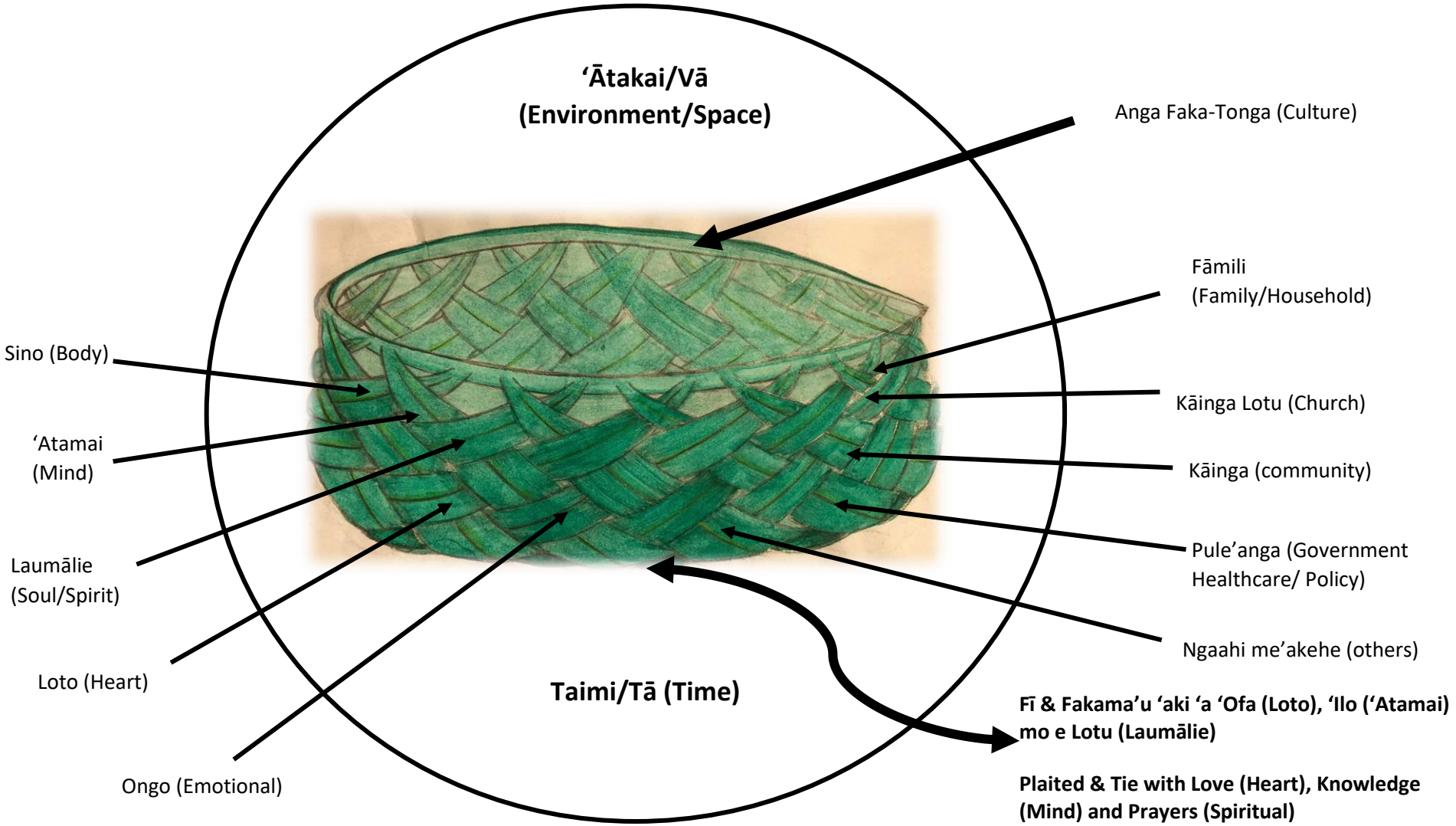
Lālanga of a kato polopola, can be done by an individual or with others in a group of people, fāmili, kāinga, kāinga lotu, community, or friends. The art of lālanga, weaving

draws on maintaining a holistic approach, keeping the coconut leaves (strands) together to serve the desired purpose. The number of leaves required depends on the basket's size. It is about connecting and forming/maintaining relationships, keeping it all together. As the Minister for Pacific Peoples, Hon Aupito William Sio acknowledged, Pacific peoples voices and experiences need to weave together to thrive in Aotearoa (Ministry of Pacific Peoples, 2018a).

In our study, the context of lālanga, identifies the participant's role of a Tongan with T2DM within a collective effort to improve diabetes management and food practices. Weaving involves strands of individual, family, and community, as well as the government, health and diabetes service providers, and community services. Weaving involves different people at many levels of knowledge and experiences, and the Western and Tongan interpretations of T2DM. The strength of the kato polopola builds upon the connections and relationships among the strands. Lālanga weaves each strand to hold it tight: togetherness is a strength, as an individual strand is not a basket. The loose or missing strand may create a hole, which can weaken the basket's strength and purpose. Participants of group talanoa recognised those who are willing to make changes are *more* likely to be able to live a mo'ui lōtolu, holistic life.

Diabetes management and food practices start with the individual accepting with loto lelei (good heart), making connection and engaging with famili (family), kāinga lotu (church), kāinga (extended family and community) and healthcare service providers to help weave together the stands to fit the purpose at this tā (time) and vā (space).

Figure 2. Kato polopola (Food basket) – ‘Aonga mo Tōlonga (Useful and Durable)



Ngaahi Konga ‘o e Kato - Parts of Kato polopola

Ngutu (Rim): Anga faka-Tonga (Tongan culture)

The rim is made from the midrip or stalk (Churhwood, 1959, p. 399), the strongest part of the basket. The rim determines the size and shape of the basket.

The core cultural values identified by study participants were tauh vā, maintaining relationship with fāmili, kāinga (extended family), kāinga lotu (church), community and diabetes healthcare providers and aligned with other Tongan studies (Kalavite, 2019; Koloto, 2017; Mahina, 2017; Tu'itahi, 2005). The faa’i kaveikoula (four golden pillars) include faka’apa’apa (respect), mamahi’imea (reciprocity) and loto tō (humility) with the value of ‘ofa (love and compassion) which sustain and determines why Tongans are motivated and moved to act and/or behave in a certain way.

The aspect of wellbeing in relation to food practices and diabetes management are enacted by weaving the kato polopola. The number of louniu, strands dictate the size and strength of the kato polopola. The strength is in the many strands woven together, each strand has a purpose, and each purpose is essential for the successful use of the kato polopola, food basket. Mo’ui lōtolu, holistic wellbeing achieved through weaving each strand together through talanoa. The ten strands promoting wellbeing were identified as:

Sino/Body: Physical wellbeing

- The T2DM person needs to maintain good blood sugar level, weight, and make ongoing food choices that promote health.

‘Atamai/Mind: Mental wellbeing

- learning that arouses understanding, making decisions with commitment to diabetes management.

Laumālie/Soul: Spiritual wellbeing

- personal faith, and religious belief, connecting with church members.

Loto/Heart:

- the centre of authority determining what to accept or reject., It is connected the soul/spirt and mind, to interpret and transform information into action

Ongo/Emotional:

- how the person feels which could be related to blood sugar level, feeling of being accepted by others, having to decline favoured food, having to maintain vigilance.

Famili/Family:

- household who the person with T2DM eat and lives with.

Kāinga Lotu/Church:

- It is common for Tongans in Auckland to attend church on a weekly or regular basis. Food served at church impacts peoples food choices and diabetes management

Kāinga/Extended family and community:

- what food is served in community cultural celebration or gifted to the family on occasions when there is a traditional expectation to visit 'with food'.

Pule'anga/Government services:

- Tongan people engage with the healthcare and diabetes services for medical review and are referred to doctors, nurses and dietitians for diabetes management, guidelines, and government policy

Ngaahi me'akehe/Other services

- Services and other matters that is relevant to Tongans with T2DM, based on the time and space as necessary. For examples, interpretation services, cultural support, pastoral support at primary healthcare services.

Faliki/Base: Fi tolu ‘o no’o/Plaited and tie

The base is made last, the pola (weaved coconut leaves, strand) is folded, connected with three strands plaited and adds the strength of the finished basket. The study participants stories, talked about the strands of ‘ofa (love), ‘ilo (knowledge) and lotu (prayer). Talanoa with my text and interpretation of text, revealed the essential roles of these three strands, fī, plaited participant’s individual loto (heart with love), ‘atamai (mind with knowledge) and laumālie (soul/spirit with prayers) and no’o (tie) together as the underpinning, which hold together the basket.

In our study, the context of lālanga, identifies the participant’s role of a Tongan with T2DM within a collective effort to improve diabetes management and food practices. Weaving involves strands of individual, family, and community, as well the government, health and diabetes service providers, and community services. Weaving involves different people at many levels of knowledge and experiences, and the Western and Tongan interpretations of T2DM. The strength of the kato polopola builds upon the connections and relationships among the strands. Lālanga weaves each strand to hold it tight: togetherness is a strength, as an individual strand is not a basket. The loose or missing strand may create a hole, which can weaken the basket’s strength and purpose. Participants of group talanoa recognised those who are willing to make changes are *more* likely to be able to live a holistic life.

The importance of the **Kato Polopola** approach to working with people with diabetes is that it holds all the complex strands together as a whole. Effective management of T2DM reflects the very fabric and structure of Tongan society and the beliefs and values of Tongan families. It is about no one thing; it is about all the strands woven together held by ‘ofa, ‘ilo and lotu.

Food practices and diabetes management start with the individual accepting with loto lelei (good heart), making connection and engaging with famili (family), kāinga lotu (church), kāinga (extended family and community) and healthcare service providers to help weave together the stands to fit the purpose at this tā (time) and vā (space).

Participants stories recognised that a Tongan with T2DM needs a ‘heart’ that accepts and takes the responsibility to work with others in weaving the strands. Loto (heart) is

the centre of authority and supported by Tongan academia and researchers (Manu'atu, 2017; Ofanoa et al., 2016; Vaka et al., 2016). Tongans with T2DM first need to be willing to accept and take responsibility to weave their own basket. By accepting being diabetic, she or he makes connections, in talanoa with family, church, community and health providers, as they can help to weave her or his food basket. A basket of knowledge comes from lived experiences shared with others through talanoa, telling of personal stories, a communal way of living. The person with T2DM owns the basket, in which she or he can share with family, friends, church and community members, tauhi vā, maintaining relationships with respect and reciprocity. It is now for the family, the church, and the health service to honour the person with T2DM. What food and koloa (treasures) are put into their basket is of great importance.

Group participants made aware and appreciated the cultural values of food that communicate ‘ofa (love), give honour, thanks with, and appreciate others. I reflected on what my late father used to say “Tokanga ki he kato ke faka’ofo’ofa he ‘oku ne tala e kakano ‘ete pola/feilaulau” (“Be responsible for the content of the food basket as it demonstrates the quality and value of the feast/offerings”). He always made sure that the best of the feast was put in the basket, to honour the church minister and guest of honours, tauhi vā, appreciate his or her presence, fulfil obligation to superiors (fahu). The food basket is also offered as an ‘inasi (allocation/entitlement) at special church occasions like Misinale, an annual church donation.

In the literature review chapter (Chapter 2), the emphasis was on health services and how they provide diabetes services, what works and does not work, and the statistics of successes and failures with diabetes services for Pacific peoples and in particular Tongans. What has come through so strongly in the preceding discussion is the knowledge of family, community and church, the meaning of food and of having diabetes, and how empowering the whole community with successful strategies is needed to support those with T2DM. This came through more strongly that the discussion around diabetes services.

Linking to existing research

It is useful to consider the findings of our research in relation to relevant literature.

One of the key findings and insights from the participants' stories was that none of them was aware that s/he had diabetes at the time of their diagnosis, as they did not feel sick. This is aligned with study on Tongan with T2DM in the United States by Wright and Breitenbach (1994), in Tonga by Matoto et al. (2014) and here in New Zealand by Moata'ane et al. (1996) and Finau and Finau (2003). Collectively, they found that Tongan people with diabetes often do not feel sick and regarded the absence of symptoms as being disease-free, being well, and therefore they had little concern for the importance of diabetes screening, management, and lifestyle changes, including food practices. In addition, Faletau et al. (2020) conducted semi-structured interviews with 12 Tongans with pre-diabetes to understand their concept of the risk of developing T2DM. They found that Tongans were not aware of the risk and became fearful when they became aware that they had diabetes.

Furthermore, our research also found that the participants were at high risk of developing T2DM, and entitled to free screening for diabetes, yet none of them had been screened for diabetes until physical pain triggered them to seek medical treatment. Participants' talanoa about the importance of screening especially for Tongan people and family members who are at high risk of developing T2DM. They recommended that people should not wait for crisis to happen. This is supported by the Ministry of Health (2015c) plan for people at high risk of diabetes '*Living well with diabetes*'. The plan supports the study participants' recommendation that if diabetes is detected early in its development, people with T2DM had time to learn, manage and improve their glycaemic control and other risk factors, helping them to avoid long-term complications. Furthermore, Akbar (2019a) community-based participatory action research study of 148 Australian Pacific women (API) with T2DM found variations between ethnic groups with self-management. This study found Tongan women were one of the ethnic groups that were less likely to seek support from health professionals and less likely to adhere to healthy eating behaviours.

Another key finding from our study was the powerful influences of family, church and community roles in diabetes management and food practices. The participants stories acknowledged that Tongan people draw their sense of belonging from tauhi vā and fua fatongia (fulfilling duties and obligations) to kāinga, family, church, and community. This

is aligned with Fakahau's (2020) doctoral study of the impact of the revenue reform on vulnerable communities in Tonga. He found that the participants' three financial priorities were kavenga fakalotu (church obligations), fakafāmili (family responsibilities) and fakafonua (Tongan society/community). Fakahau's study involved semi-structured talanoa with 51 Tongan adults in Tonga. It was not defined whether they had T2DM. His findings complemented my study in showing that family, church, and community are the foundation of being Tongan. Other Tongan academics (Fehoko, 2020; Kalavite, 2010; Vaka, 2014) have also agreed that health and education programmes need a context-based approach for family and community groups. A co-designed mobile health (mHealth) programme intervention study with Tongan and Pasifika people in Auckland and Waikato, New Zealand, also confirmed that family and community are the most important factors for wellbeing for Pasifika peoples (Firestone et al., 2020).

In our study, participants talanoa about the important role of church in diabetes management and food practices. This is consistent with Shahab et al.'s (2019) qualitative study. They explored the experiences and perceptions of 20 Samoan patients living with diabetes and their family members, aged 36–67 years, using semi-structured interviews. Their study highlighted the important role of cultural factors and the centrality of spirituality and church in diabetes management in the Samoan community in Australia. The Moata'ane et al. (1996) qualitative study of 20 Tongan adults with diabetes mellitus in Auckland, found that Tongan's cultural beliefs plays an important role in diabetes management and food choices. They reported that Tongan people must focus on the spiritual aspect of treatment rather than on medical advice on dietary management. Furthermore, Barnes et al. (2004) measured personal illness beliefs about diabetes, medication, and adherence to treatment by Tongan and European patients in Auckland. They found Tongan beliefs to be culturally determined around illness including some spiritual factors. Tongan academic and researchers also recognised the importance of Tongan cultural and spiritual wellbeing (Faletau et al., 2020; Foliaki & Pearce, 2003; Ofanoa & Raeburn, 2014; Vaka, 2014).

Our study findings also highlight that the participants viewed the sharing of food to be an integral part of life in the NZ Tongan community. Participants stories, talanoa about how food draws family and community together. Sharing food at a Tongan event

reinforces the identity of being active members of the community. This is consistent with the Moata'ane et al. (1996) study, where participants identified that the cultural values of food outweighed the medical and diabetes dietary benefit. Tu'inukuafe (2019) master's thesis recognized the cultural and social values of food for Tongan, provide a sense of belonging and identity. Food is more than a meal; it brings people together especially in celebration.

This study is grounded in talanoa, a research framework and research method that embraces Tongan language and culture. Talanoa is widely use throughout the Pacific region, as it stems from cultures in which oratory and verbal negotiation have deep traditional roots (Vaioleti, 2006, 2013). Through talanoa, the participants in this study talked personally and in groups about their lived experiences with diabetes management and food practices. This is aligned with other Tongan academics and researchers approaches. Latu (2009) and Kalavite (2010) used talanoa with Tongan students and parents to discuss the teaching and learning of Tongan students in New Zealand. Talanoa demonstrated a way to share personal stories, history, knowledge and treasures kept in the heart (Manu'atu et al., 2010). Furthermore, talanoa is key to creating understanding, establish rapport and making connection within family, church and community groups (Akbar, 2017; Otsuka, 2006). Talanoa validates people's experiences. It allows people to talk about their lived experiences, the language they use and the connections they make, to reveal the world they see and what they do and how they act (Akbar, 2017; Vaioleti, 2006, 2013; Vaka et al., 2016; Vaka et al., 2020).

In our study, the participants of group talanoa recognised that talanoa opens the hearts to hear, learn, accept, and take responsibility. This is supported by Vaioleti (2006, 2013) and other Tongan academics and researchers as they described the benefit of talanoa (Fakahau, 2020; Fehoko, 2020; Latu, 2009; Teisina, 2012; Vaka, 2014). Through group talanoa, participants can unpack complicated ideas, share personal experiences and learn from each other, a group wisdom. As Kotoni shared in the group talanoa, *"Neongo pe na'a ta 'osi talanoa, ka 'oku ou ako e me'alahi 'i he'etau talanoa fakakulupu. Te u 'alu 'o fai ia, ke sai hoku suka" ("Even though we already talked (during the individual talanoa) but I have learnt alot from our group talanoa. I will put these into practice, to improve my diabetes").* The study participant's stories revealed how talanoa opens out

to share koloa fūfū (hidden treasures) and reveals thoughts that remain sacred in the heart (Kailahi, 2017; Manu'atu et al., 2010). People are loto lelei (willing), comfortable to contribute through talanoa when there are good interpersonal relationships among them. Participants in good harmony with each other are willing to pōtalanoa, to share ideas and make connections (Fa'avae et al., 2016). Tongan could talatalanoa (talk endlessly) without time constraint and develop ideas through talanoa (Halapua, 2007; Manu'atu, 2003; Vaka et al., 2016).

Strategies towards achieving change.

Our study participant's stories revealed the powerful influences of fāmili (family), kāinga lotu (church), kāinga (extended family, community) and social structure, as nofo-'a-kāinga, keeping it together (whole) in the holistic approach to managing T2DM. As explained, the study participants stories explained being Tongan with T2DM in the Auckland, New Zealand context, means it is important to establish a trusting relationship not only with the person with T2DM, but with the family right from the beginning. Based on the findings of this research explained in the previous sections, and of the literature reviewed, the next section suggests a way of working towards culturally fitting strategies in bringing change for Tongans with T2DM.

This study has demonstrated the importance of working in partnership with people with lived experiences and used 'ilo (knowledge) in ways that is beneficial to the collective good of the family, church and wider community. Participants' stories told the value of learning from others. It demonstrated Tongan cultural values of faka'apa'apa (respect) and tauhi vā (maintaining relationships) (Ka'ili, 2005; Kalavite, 2020; Koloto, 2017; Ofanoa et al., 2020). Participants talanoa about the expectation to do as they were told (tala) by health professionals. They are trusted and respected for their expertise. This is aligned closely with Tongan academia and researchers within education field. They suggested that learning is based on a high level of trust within the Tongan social structural system and in people with authority (Fonua, 2018; Kalavite, 2010; Thaman, 1997). Tongans continue to uphold Tongan values and respect those with seniority and authority (Kavaliku, 2007; Paea, 2015; Vaka, 2014). They are respected for knowledge, skills, cultural status, leadership with "mana" and koloa (treasures) (Kavaliku, 2007;

Latukefu, 1968; Paea, 2015; Talakai-'Alatini, 2014). The study participants tala (told) and shared their stories, skills, and knowledge for communal benefits.

Tauhi vā (Establish and maintain relationships):

It is vital to establish a trusting relationship with the person and their family right from the beginning of diabetes management. It is important to learn about and know the patient and what matters to them. As has been demonstrated in both my findings and in the literature, reciprocal relationships help to build trust, confidence, and mutual respect and drive the will to collaborate (Ka'ili, 2005; Kalavite, 2019; Koloto, 2017). This means the planning and delivery of diabetes care with family may initially take longer but, once trust is established, maintaining the relationships, tauhi vā, is easier.

Mo'ui fakatokolahi 'ikai ko e mo'ui fakatokotaha (Collective instead of individual approach):

The study participants revealed that a Tongan person with T2DM is likely to rely on family, friends, church, and community support so diabetes management plans need to incorporate a diabetic patient's family, church and community backgrounds. As diabetes is an illness affecting physical, mental, and spiritual wellbeing, a collective approach is crucial in supporting wellbeing, mo'ui lōtolu. It directs our attention and talanoa about shared values that binds individuals to the power of communal cultural worlds. This is aligned with Watling et al. (2020) findings that medical education has shifted beyond the individuals to form organisations and occupy cultural worlds and constitute practices. It is essential to inform diabetes providers about the nature of Tongan community groups, similar to Koloto (2017) and (Tu'itahi, 2005) suggestion of tauhi vā and talanoa in the context of

- Famili - Talanoa Fakafāmili (Family Talanoa)
- Kāinga - Talanoa Fakaha'a/Hako (Clans/Extended Family Talanoa)
- Siasi - Talanoa Fakasiasi (Church Talanoa)
- Kolo - Talanoa Fakakolo (Village Talanoa)
- Vāhenga/Feitu'u – Talanoa Fakavahe/Feitu'u (Community/District Talanoa)
- Tanoa Fakafonua (Tonga National Talanoa)

A collective and communal approach creates an openness for participants to share within a group talanoa. This is talanoa as an open forum, at zero balance and on equal

levels, without any barriers in the health professional–patient relationships. It also promotes respect and positive attitudes towards one another with a sense of belonging and support in place. This is supported with Havea et al. (2021) faith-based and community service violence-prevention programme with Tongan kāinga (families). The study engaged with 49 kāinga (about 240 people) and although this study was about family violence, it highlighted the importance of engaging talanoa with kāinga, Tongan families, church, and community networks. Kāinga members talanoa in a safe and culturally appropriate space to pause and reflect and then commit to moving towards violence-free living. Furthermore, Havea et al. (2021) highlighted the importance of interweaving of spiritual faith and Indigenous knowledge, rebuilding positive familial relationships based on core Tongan Christian values in addressing social issues.

Taukei/A'usia 'a e tokotaha suka (Patient expertise):

Acknowledging` and building on the group wisdom that the Tongan church and community has come through as an important strategy from my study findings. From the participant's talanoa in my research, it was very clear that when participants came together, they helped each other. The group wisdom in talanoa came from with each person being able to contribute with their own personal expertise hence about managing diabetes as a Tongan. The recommendation here is to provide space within group talanoa for people with T2DM to tell their personal stories. "What matters to them" is likely to resonate with other Tongans. Such story sharing needs to be at a time and space that is easily accessible and feels familiar. Everyone's stories are different and create open conversations where insights can be gained. Diabetes generic information does not usually take into account what it means to be Tongan (Finau & Finau, 2003; Moata'ane et al., 1996; Parks et al., 2020)

Taki lelei (Good leadership):

Good leadership is central for communal diabetes management and food practices. Leaders need to inspire, demonstrate, support, communicate and sustain appropriate food practices. Such leaders could be church ministers, or family, community, or cultural leaders, as well as professional leaders. Their role is to empower others, provide a supportive environment and promote things that help people with T2DM in the family, and at church and community activities. As leaders are trusted, respected and influential

in the church and community, they need to live by example. Good leadership is supported by many academia and researchers (Baruth et al., 2015; Billot, 2005; Katavake-McGrath, 2015; Kavaliku, 2007). Ofanoa et al. (2020) Tongan concept of 'O'ofaki demonstrated the strength of Pacific peoples come together and support each other for health and community programmes. The young ones are protected and secured under the wings of the community leaders

Fakatu'utu'unga 'o e sosaieti Tonga (Tongan social structure):

Church ministers and leaders participating in this study, recognized the power and authority of Setuata (Parish steward) and Tauhi'aho (Cell group leaders) within Tongan church context. When working within the Tongan community, it is important to recognise Tongan hierarchical structure, status, and ranks. Royal, nobles, church ministers and professional leadership are important in any liliu, change in the Tongan community. Participants stories revealed that leaders in community groups, like church ministers, need to convince middle management, like the setuata (parish steward), tauhi'aho (cell group leaders) and taki potungaue (programme leaders) of the need to make changes. Higher authority can make the change and others will abide and follow, as it is for the benefit of the community. This is supported by Tongan academia and researchers, and they acknowledged the significance of Tongan social structure, cultural and social values with as strong sense of identity (Billot, 2005; Fehoko, 2020; Kalavite, 2010; Ketu'u, 2014; Vaka, 2014)

'Ilo 'o mo'ui'aki (Transformation learning):

Empower Tongan people to make sustainable behavioural changes (liuanga), supported in an authentic environment. Participants group talanoa, shows that when they come together to talanoa, they will know how to relate to each other and will want to work together and create a culturally safe platform for learning. They also learn by engaging with GPs, health and diabetes service providers, families, community, and church groups. Simple and practical behavioural changes implemented around church and family food practices, are key to promote, and sustain positive attitudes towards being diabetic in a culturally safe way. From such learning, there needs to be clear understanding, expectations, guidelines, and resources to support transforming knowledge into action at home, and in the church and community environment.

Talanoa faka-Tonga (Talanoa in Tongan language):

Our study participants, talanoa and conversation was mainly in Tongan language. Therefore, using native language that values the Tongan culture, is likely to put people at ease, especially the older generations (Island-born) with T2DM. It helps establish relationships, connection to own values and knowledge, identity and a sense of belonging, and even a purpose in life (Penn et al., 2017). It will improve health literacy and minimise the barriers of having to translate into English.

Mahu'inga 'o e me'akai Tonga (Incorporate cultural values of Tongan food):

Talanoa focused a lot on cultural values and the social and ceremonial functions of food habits of Tongan people. Diabetes service providers need to recognise this and these need to be incorporated into diabetes management plans, along with the values of love, respect, maintaining good relationships and the provision of gifts and services.

Loto'aki (Aim for the hearts):

Information and training need to aim to win the Tongan heart (Loto'i Tonga) (Halapua, 2007; Ofanoa et al., 2020; Vaka et al., 2016). Learning depends on what the heart accepts (loto ki ai). The heart informs the mind about what to put into action and the body will then make the changes. Prayer and Bible passages set the heart in right direction, for example, John 14: 1 "Let not your heart be troubled. Believe in God, believe also in me." The way to do this is include talanoa, prayers, establish and build a trust relationship, tauhi vā with core Tongan cultural values of faka'apa'apa (respect), 'ofa (love) and mamahi'ime'a (reciprocity). Talanoa in Tongan language is most likely to resonate and capture Tongan hearts. As Nelson Mandela said "If you talk to a man in language, he understands that goes to his head. If you talk to him in his language, that goes to his heart". So talanoa in Tongan language is a way of entering, connecting, and engaging with Tongan people through the heart.

Mo'ui Fakalaumālie (Spiritual Wellbeing) - Lotu (Prayer):

The study participants talked about the value of prayers and Christian faith in managing diabetes and everyday living. Lotu is significant for spiritual wellbeing, and it is a means of coping with diabetes and with changes in the lives of family, church, and community. Lotu and spiritual wellbeing contribute to mo'ui lōtolu, together with the physical and

mental wellbeing. Participants agreed with saying lotu as part of individual and group talanoa, belief in superior being who was with their family during this difficult time. Our study recommend that health and diabetes care providers should recognize and support lotu. There is a need to offer methods to meet this spiritual need, as a part of diabetes management. Discussing lotu and spiritual issues may need assistance from the diabetes care team, diabetes patients or involve local church ministers. Academia and researchers support lotu and prayer as the Tongan and Pacific way (Akbar, 2018; Fakahau, 2020; Fehoko, 2020; Hopoi & Nosa, 2020; Taufatofua et al., 2020; Tomlinson, 2019; Vaka, 2014)

Lotu Kai/Tapuaki'i e me'akai (Saying grace/Blessing the meal):

Study participants talanoa about lotu, prayer, relevant to bless the food/meal. They recognized special prayer of blessing the food speaks of the purpose of eating. A common prayer learnt at early age (two years old at Sunday school) is: "'*Eiki tapuaki'i e me'akai, ke 'aonga ki homau sino, fai 'aki ho finangalo, 'ia Sisu Kalaisi, 'Emeni"* ("God bless our food, make it useful to our body, to do thy will in Jesus Christ name. Amen"). In talanoa with participants, family, and community members, they tell their stories of how the word of prayers and details (scripts), recognize the significant connection of being Tongan with T2DM, how lotu reminded of food choices. The study participants appreciate God's provision, lotu open hearts and soul (spirit) to recognize how food choices influence physical and mental wellbeing and diabetes management.

Polokalama ako ki he suka (Diabetes education programme):

Participants stories recognised the need to engage with the family. Education programmes need to be delivered to the whole family/household to facilitate change within a family context. Needs assessment must be through talanoa, listening to patient and family talanoa, and context-based in the family situation. Such a process will develop implementation in partnership. There needs to be a review regularly to clarify any concerns. Again, this review needs to be through talanoa, listening to the family's stories, with a hope that they will tell a different story, to reflect the changes made in transforming knowledge to action.

Implications for practice

The participants' stories guided a way of implementing services (including health services) for Tongan people with T2DM.

Talanoa (Story telling):

Tongans with T2DM talanoa their personal stories about what matters to them. Time needs to be allowed for the diabetes service provider to listen, learn, and understand. The usual structured dietitian care includes nutrition assessment, reviewing blood test results with an education process to follow. Sometimes, dietitians and diabetes care providers miss what matters, what is most important to the person with diabetes (Beckingsale et al., 2016; Siopis et al., 2021; Tabrizi et al., 2007). Therefore, talanoa provides a forum that honours the patient, and allow space for health providers to listen to their stories of what matters to the person - whether it is their blood sugar level, financial situation, what food they can afford to buy, diabetic treatment or, most likely, all those things impacting each other. In addition, Cammock et al. (2021) supported the use of talanoa framework to communicate and connect with young entrepreneurs in Fiji instead of Eurocentric frameworks which aligned with our study research framework.

Polokalama Fakafamili (Family-based programme):

This study recognised a family-based diabetes programme needs to be available in which diabetes service providers engage with the family (household), extended family and people who live/interact with the person with T2DM. Talanoa fakafamili with a health professional would ideally take place in a home environment and would be inclusive of family members who do and do not have diabetes. There needs to be an opportunity for family members to share their stories of the reality of living with diabetes. A co-designed/shared diabetes management plan developed and tailored to the family situation (context) is much more likely to be adopted. As group talanoa participants confirmed, family members want to support and look after the person with diabetes, but they need assurance about what they can do. A low level of understanding about diabetes management and food practices is a barrier. Family-based programmes would empower them to take on their responsibilities (fatongia) and tauhi vā (look after) the family's wellbeing.

This study recommend that family-based approach would likely improve access to services like diabetes screening, risk assessment and opportunities to talanoa about checking the wellbeing of the whole family. Research study explored the relationship of perceptions and lived experiences of family members with people with T2DM reinforces the importance role of family support in diabetes management (Berry et al., 2020; Berry et al., 2018; Firestone et al., 2020; White et al., 2009). Furthermore, the core cultural values of 'ofa (love), mamahi'ime'a (reciprocity) and faka'apa'apa (respect) strengthen family wellbeing (Fakahau, 2020; Havea et al., 2021; Kalavite, 2019; Koloto, 2017; Matapo & Teisina, 2021).

Polokalama Faka-siasi, kāinga lotu (Church-based):

A community and church-based programme is crucial to engage with diabetes services (Parks et al., 2020). Church families get together on a weekly basis. Participants, Tupouta'anea, a church minister with T2DM and husband Tevita, who also had T2DM, a community and church leader shared with the group talanoa a successful pilot health programme at their church. The programme targeted families with young children, but there was an open invitation for church families. Group talanoa participants' stories also recommended for churches to adopt nutrition policies like 'no fizzy drinks', 'no fried food' and 'drink plenty of water'. They believed that creating supportive environment is a helpful model. Research supports the success of this approach with the Samoan community. Hopoi and Nosa (2020) in a study of ten Samoan Methodist Church ministers in Auckland found that all the church ministers had a sense of responsibility for the holistic wellbeing of their church members. The study by Bell and Swinburn (2015) and of Samoan church communities also demonstrated that a health and nutrition programme was beneficial for church members in terms of weight loss programme.

Polokalama Letio (Radio programme):

Study participants shared how they learnt information about diabetes and appropriate food from the Auckland-based Tongan radio programme. They suggested information and education programme talanoa could be offered on the Tongan radio programme. There is also an opportunity to investigate using social media and on-line programmes such as You tube clips of Tongans with T2DM sharing their expertise. Al Omar et al.

(2020) intervention study in an Arabic population found eighty percent of 109 study participants have, witnessed the benefit of social media network application. They concluded that digital diabetes self-management education program via WhatsApp improved diabetes control and outcomes regardless of the level of patients' health literacy and numeracy. Another research that explored patients' experiences with the used of telehealth during the first COVID-19 pandemic lockdown in New Zealand, reported a high level of patients' satisfaction. The study participants found telehealth to be convenient, safe, and worked best for routine and familiar health issues especially when rapport was already established between patients and clinicians (Imlach et al., 2020). Telehealth services are options that could benefit Tongan people with T2DM, especially if cultural values of tauhi vā, built upon the established existing link with diabetes health providers.

Me'akai mo'ui lelei ma'a e suka/Healthy diabetes meals:

Participants with T2DM talanoa about the difficulty of eating differently from the rest of the family. Meals are rarely eaten alone. Eating together was discussed as a social event that included extended family and friends. Study participants shared how much easier it was to eat healthily in the church and community environment if the food provided fell within their diet. Participant talanoa suggests there needs to be ongoing attention to the demonstration and provision of appropriate food in public settings for Tongan people with T2DM. Gamble et al. (2017) study and literature review highlighted the need to include tradition Pacific Island foods, traditions and beliefs into diabetes self-management education programme for Pacific peoples living in New Zealand

A Tongan restaurant where families can eat and talanoa about diabetes would be an excellent initiative.

Implications for health professional education

Our study recognised the Tongan community needs to learn and transform knowledge into action. It is important for health professionals to offer an opportunity for Tongans with T2DM to share their stories. Communal learning allows health professionals to listen to patients' realities and gain insight into how they think, and how they react, to interpret their situation and understand what matters now. Likewise, Tongans with

T2DM can listen to health professionals' messages. Talanoa forums provide the opportunity for the patient and health professional's therapeutic relationship to develop. Ideally, health professionals working closely with the Tongan community would also be Tongan. There needs to be supported to encourage Tongan school leavers into the health professions. Non-Tongans health professionals working in this area need the opportunity to develop skills in a talanoa approach. The programme would need to include:

Taumu'a/Goal – Mo'ui lōtolu (Wellbeing):

A holistic approach, keeping it whole and aiming for wellbeing in body, mind, and soul.

Founga (Strategy):

Talanoa bridge the gaps between participants and education providers: "Fofola e fala kae talanoa e kainga" ("Let's talk"). Target the whole community, family and church-based approach and include diabetics and non-diabetics.

Fengaue'aki mo e kau Taki (Engage with Tongan leaders):

Non-Tongans need to understand the ranking nature of Tongan social groups. A key strategy is therefore to build relationships with leaders to seek their support and involvement. "*Ko e liliu pe mei 'olunga"* as Soane (T2DM, Church Minister, Group Talanoa 2) emphasised – the higher authority makes changes and people will follow. In addition, there is a need to engage with local health professionals (within the church or community groups) and get them involved in the education programme, to build upon their relationship with the Tongan community. They are most likely to be known to participants and/or related to the family/community: tauhi vā, maintain relationships.

Taki Lotu/Fakalaumālie (Spiritual dimension):

Health professionals need to engage with church ministers and offer the opportunity for them to contribute to spiritual wellbeing. They can open and close a forum with prayers. Their involvement adds value as they are well respected in the Tongan community. This is consistent with Hopoi and Nosa (2020) study which found church ministers are well-respected leaders in the Samoan church which and they play a key role in in supporting health programme. Therefore, Tongan community members would attend in

faka'apa'apa, respecting, being loyal, and tauhi vā, maintaining relationships, with church leaders.

Mahu'ingamālie (Meaningful):

Diabetes education needs to be meaningful (practical demonstrations and context-based), within a social context that includes families, church, communities, and social networks. For information to be meaningful to the Tongan community, it needs to aim to reach their hearts. Using patients' lived experiences will resonate with Tongan people. Information needs to be available in the Tongan language. English is a second language and literacy can be an issue. People may have adequate general literacy but may not have health or nutrition literacy. Likewise, non-Tongan diabetes providers need to understand Tongan culture, food practices and way of living.

Ako ki he me'akai (Nutrition and food education):

The participants talanoa their understanding that sugar affected their diabetes, but they did not understand that simple carbohydrates had a similar effect. Participants recommended that relevant nutrition information should be offered to improve knowledge about Tongan food, serving size and the basic measurement of food. These need to be adapted to culturally familiar food and basic diabetic meal plans; including food that Tongan people recognise and are familiar with. Tongan food should be promoted to retain traditional values. Use basic measurements of food to demonstrate portion size and share practical tips of diabetic patients (expert stories).

Use Tongan food at any education forum. For example, have a haka (boil/cook) for breakfast. Reassure Tongans with T2DM that they can have Tongan food for breakfast like cooked banana and fish instead of an English breakfast like porridge or cereal. Focus on promoting Tongan food to retain traditional values. An intervention needs to provide guidelines for catering at cultural events.

Recommendations for health services and government

Our study, and the analysis of this alongside published literature and health service documents, highlight ways that health services, education providers and government can help Tongan people with T2DM better manage their diabetes and food practices,

help minimise and prevent development of T2DM in New Zealand (Prevavessi & Templeton, 2020)

In New Zealand, the current diabetes services are aimed at people with diabetes as individuals. This study recommends a family, church and community-based health service approach and members should also be involved and should participate in diabetes management. Havea et al. (2021) in their research on family violence looked at, and recommended family based and church programmes. Gurney et al. (2020) found substantial disparities in long-term conditions for Māori and Pacific peoples compared to other ethnic groups in New Zealand. Their study supports our recommendations that solution requires healthcare services to address systematic issues and inequalities in health care. Gurney et al. (2020) also reported that health inequalities would be worsen with the impact of COVID-19 and this need to be addressed for the benefit of Tongan and Pacific people in New Zealand.

At the final stage of this study, the latest report on the economic and social cost of T2DM in New Zealand and the guidelines for T2DM management highlighted urgent needs for T2DM as a government priority. Both reports recommended that diabetes services in New Zealand require a collective, holistic, and a system-wide response from the Government, society, and individuals. The focus is on Pacific and Māori populations (PwC, 2021; The New Zealand Society for the Study of Diabetes, 2021). It is aligned with our study findings and recommendations.

Polokalama Fakakulupu/Funding of group talanoa programme

The current funding for diabetes dietary services is on an individualistic approach, one-to-one, face-to-face consultation with time limit of 30–60 minutes. My thesis argues that intervention programmes need the diabetes service provider to visit the home and community for family talanoa. Study participants were familiar and comfortable with receiving a family-based diabetes programme at home. Most influential determinants of dietary behaviour include family and social support. Group talanoa diabetes management is perfectly suited the collective nature of the Tongan and Pacific community.

As explained in Chapter Two, the current Diabetes Self-Management Education (DSME) programme is delivered in many forms including a group programme in the community. This is a four- to six-week structured programme and focuses on people with diabetes. My study found that an unstructured talanoa forum, a knowledge transformation programme that is meaningful and practical (mahu'ingamalie), with family, church, and community involvement, is more likely to be accepted by the Tongan heart, improving the impact, and bringing transformative change.

Kamata mei he fānau (Early life focus programme)

Diabetes intervention programmes should focus on young children from early childhood centres, and church Sunday school programmes. Learning and knowledge transformation from a young age will be more likely to produce healthier youth with a lower diabetes incidence in the future. The education curriculum and food and nutrition policy at early childhood centres needs to be extended to engage with parents and family households and include extended families (grandparents) and friends who are involved in providing food for the child. A whole community approach, weaving and incorporating the ten strands of lived diabetes experiences into family, church, community, health providers and public policy, is likely to bring transformative change.

This aligned with the latest guidelines for screening, assessment and management of T2DM in children and young people in the Australasian region (Peña et al., 2020).

Polokalama faka'ehi'ehi (Health prevention programme)

Community and church-based approaches need to include screening for people at risk of developing T2DM. Early diagnosis leads to better diabetes management. A national campaign should run through church networks, perhaps leading to a Tongan diabetes conference or church camp. Programmes need to include providing healthy food choices through cooking demonstrations.

Recommendations for ongoing dissemination and research

As part of the dissemination, I was a recipient of a Health Research Council (HRC) grant for knowledge transformation. Given the strength poetic stories have within our Tongan community, we composed a Tongan song name "Mahaki Suka mo e Tauhi Vā"

(Diabetes and maintaining relationship). The chorus is included below. For the remainder of the song, refer to Appendix O.

Tau	**Chorus**
‘Eiki ke tapuaki me’atokoni	God bless thy food
Hanga ‘o foaki mai	Give us
Ha ivi ke tokoni mai	Energy to sustain
Ho finangalo ke mau fai	Let your will be done
Tauhi temipale, mo’ui’aki	Maintain living temple
Mohu kelesi ‘Atonai	Gracious Lord

Future research

The examination of my research findings alongside the existing published research highlighted significant areas requiring further research. The following ideas for further research emerged.

- Investigate the efficacy of using online teaching resources made by Tongans for Tongans.
- Talanoa participatory action research: work with a group of newly diagnosed Tongans with T2DM (and their families) to plan, act and reflect on teaching strategies.
- Talanoa participatory action research: work with health providers in planning, implementing, and evaluating changes to how health care is delivered to T2DM Tongan families.

Strengths and limitations of my research

While I made the decision to interview Tongan leaders with T2DM, most of them are church ministers so that embedded my study within the Tongan Christian community. While most Tongans are active participants in this Christian community, some are not, particularly the younger Tongan people. Their voices may have brought other insights.

This study used both in-depth talanoa with individual participants and group participants. In the future, I would involve family households where all family members would be able to share their experiences, especially children. All participants were born in Tonga and heavily involved with the Tongan community. New Zealand-born Tongans and those who are not involved with the Tongan community may have different lived experiences. The number of New Zealand-born Tongan have increased over time, and

maybe the number of Tongans involved with the Tongan community will become less over time (Statistics New Zealand, 2018).

Our study's strengths derive from me being a Tongan researcher with Tongan participants. Tongan protocol and a culturally safe approach came naturally. It was easy to establish rapport and trusting relationships. However, it can also be a weakness of the talanoa as participants assumed that I knew their backgrounds, such as the names of their spouses, children, and other people at church.

Our study aligns with the Pacific and Tongan approach, of building respect and reciprocity, and involved positive outcomes for all in this health research. To apply this approach with patients, I am mindful that the approach is holistic in regard to the way people live and operate with respect to their communication and actions. It is not about individual (personal) gain, but incorporates how it will benefit the collective, the extended family members (Fairbairn-Dunlop et al., 2014). This paradigm is more to do with how one relates to others and maintains a positive rapport while being respectful of cultural protocols of communication (Ponton, 2018).

Personal reflection

In my research journey, I talanoa in Tongan with Tongan participants, talanoa with the text, talanoa with myself, talanoa with God in prayers, talanoa with the supervision team, the expert advisory groups, friends, colleague and talanoa with my past. Talanoa combined with the nature of hermeneutic phenomenology means that I brought my pre-understandings with me into the questions I asked participants and my interpretation of their stories. My pre-understandings included the idea that food is important in Tongan daily living, cultural and church events. However, I always believed that diabetes could be managed, and that food and dietary intake is key for good diabetes control. As people with T2DM needed to take responsibility and look after own blood sugar, especially as they fear being blind, having an amputation and/or kidney failure. As I come to the end of my study, I now recognise that my original understandings were not necessarily right or wrong; however, I now see the deeper meaning of how Tongan culture, social structure, church and family involvement influence food practices and diabetes management. Most importantly, I have come to see how all the parts must be woven back into a whole. I came to see that talanoa is

much more than a research strategy. It is the way Tongans learn, by listening to and sharing stories. The community can relate to a variety of diabetes issues in a supportive and culturally safe environment forum. Talanoa opens a space for connection with an open heart to 'heart-talk'.

In my own practice I now enjoy talanoa and allow diabetic patients to tell/share their personal stories, what matters to him or her in his or her own situation. I realise that I do not have to answer every issue, I let the patient decide what matters are important, set their own priorities and decide what process or strategy they wish to take. My role is to facilitate and consider what matters to the patient. It may not be their blood sugar level, diabetic treatment, or blood test result. Being a better listener, I have increased my understanding of their struggles, which arises from being in a dual position: a mother or father, a church minister, community and/or professional leader. Our study findings support that Tongan leader feel responsible for the welfare of others. It was never about their diabetes as an individual. It was always about others, their spouse, children, extended family, friends, church and community in New Zealand, Tonga and overseas. Food is something to give, to share and enjoy with others. It became clear to me that there is no such thing as one way that suits everyone, but there are possibilities for modifying practice to enhance the ability of service providers and the Tongan community to get the benefit of talanoa and contextualised services.

My job also involves working with other ethnic groups, including other Pacific peoples, Māori, European, Asian, and other ethnic groups. Language is a barrier for those who have English as their second language. My study grew my understanding about the role of language in understanding diabetes information. Although I use simple English, pictures, diagrams, diabetes pamphlets and handouts, it is difficult to measure how much the patients understand. Language is also a barrier for patients when asking questions and/or voicing concerns about their diabetes and food practices. Ethnic-specific programmes should be available for people with T2DM. I found that talanoa with Tongans in the Tongan language were unique experiences. Language takes the talanoa to another level and it is easier to establish rapport and build trusting relationships. I often found a connection in being Tongan; we were bound to know someone, or relate through blood connection, friends and/or church. Such social and cultural relations are important for diabetes support.

As a Tongan diabetes dietitian, I use my nutrition knowledge to guide my food choices. I am encouraged to live by example as people in the community could be watching whether I eat what I advise people to eat. I value maintaining relationships, tauhi vā. I attend a Tongan feast, to show respect and being part of the family, church, or community celebration. However, this attendance brings complexity. My food choices are limited, as I do not eat most of the food served. I would eat fruits, vegetables and rarely eat cooked meat. I am conscious as I have been interpreted as showing negative aspects of tauhi vā. People may say that I looked down on (sio lalo) and do not appreciate (ta'ehounga) the food provided. I have heard someone said "'oku kai fakapālangi ia" (meaning that I eat like a pālangi). So, I tend to avoid attending Tongan feasts, as I do not like the amount and types of food displayed. I do not eat pork, fried and high fat food. My professional knowledge and personal experiences influence my dietetic practices. I often think that Tongan people should know better and control their food intake. Tongans sometimes work two jobs. If possible, my advice would be that they are better off staying home and talanoa with their family, prepare home-made meals instead of using the money earned from their second job to buy take-aways. My participants' personal stories helped me appreciate our Tongan culture, the collective nofo-'a-kāinga. Tongan core values of reciprocal relations are basic for community survival.

Recently, I organised a community cultural event for the people from my Tongan village who reside in New Zealand. My study found that people want to be healthy and free from diabetes and illness. Food is something that everyone enjoys and draws people together. The event was held on January 23rd, 2021. About 500 members of our extended family (kāinga) attended to celebrate our ancestors and family connections. As secretary, and being part of the organising committee, I suggested to have the theme as "Nofo-'a-kāinga", making connection through a food and health programme. The event aimed for "Kai mo'ui lelei" healthy food with "no puaka" (pig) on the day. All members endorsed the idea to have mainly seafood, fruits, vegetables, and water as a drink on the day. I was stunned with the healthy food displayed on the day and everyone spoke highly of the event. This confirmed that creating a supportive environment, with healthy food available, is possible. Our kāinga enjoyed the event as well as being supported to eat healthy and stay connected. It was essential for people to have a sense

of belonging. As everyone was provided with the same food, no one felt left out. Members shared that they saved the $300 from buying a pig. Instead, they made sandwiches, bought fruit, vegetables, seafoods and nuggets, homemade chips for children. This confirmed that the principle of sharing and eating together could still be maintained with healthy food options. As a community leader, we need to create the environment and demonstrate support for healthy eating ideas.

I was also invited to speak on "Wellbeing" to a Tongan community group retreat event. It was organised by one of my colleagues. About 30 families attended with parents and their children. When I arrived at the event, I observed the healthy BBQ prepared with vegetable salad, boil taro and cassava, bread, fruits, and water. The children were happy with the food choices and believed that the menu was healthy for the whole family. Reflecting on my study and how I was brought up, I asked the audience who was responsible for praying and blessing food before they eat. All the 30 children put up their hands and I asked two of them to share their prayer. Both children said the same prayer that I learnt when I grew up in Tonga. As I unpacked the word of the prayer, I realised its richness. It is a Tongan culture shared with our children as the foundation for our food intake: "*'Eiki tapuaki'i e me'akai ke 'aonga ki homau sino, ke fai 'aki ho finangalo mo homau ngaahi fatogia he 'aho ni" ("God bless our food, make it useful to our body, to do your will and our responsibilities for today")*. As one of my study participants shared: "*After I blessed my food, then I look at the food in front of me. I asked myself, is this food useful for my body? Is it going to keep me healthy? As I need to be healthy to serve God and fulfil my daily duties"*. This person has learnt to eat what she knows is healthy for her body and leave the rest. This study has encouraged me to use this prayer in my talanoa with people who have diabetes.

Conclusion

This study has revealed Tongan people with T2DM want to achieve and maintain mo'ui lōtolu, mo'ui lelei 'a e sino, 'atamai mo e laumālie (wellbeing of body, mind, and soul). The talanoa methodology and method, with hermeneutic phenomenological approach, has highlighted that the western individualised health model requires adaptation to incorporate a holistic model of health care that involves the Tongan family, kāing lotu, church, and community. Tongans with T2DM identified ten strands (factors) of 'what

matters', what influences diabetes management and food practices as demonstrated with the concept of Kato Polopola.

This study confirmed that Tongans with T2DM need support from family (household), kāinga (extended family), kāinga lotu (church), community, and healthcare providers. A food basket woven with the collective wisdom of self/community/health services contains knowledge and information to share with others. Tongans with T2DM put goodness in other's basket to show and encourage them. As I mentioned above, the number of strands required can be more than 10. This study recommends that we can start with the 10 current issues (as listed earlier on this chapter and section 'The way forward'), that influence Tongans with T2DM. Lālanga can include more strands when people with T2DM want to address other matters. Enabling learning and sharing experiences produces sustainable solutions that promote mo'ui lōtolu, wellbeing of Tongans with T2DM. When they carry their food basket woven under the guidance of the love and encouragement of those who support them on their transformative journey, they will have learnt to effectively manage their T2DM the Tongan way.

When we see this T2DM journey for Tongan people, we see how the individualistic focus of healthcare services on diabetes management without including spiritual wellbeing and cultural values is currently not effective for Tongan community in New Zealand. While the T2DM guidelines give voice to culturally focus services, these are not implemented in a way that is appropriate for the Tongan community. This came through very clearly in the participants' talanoa. Participants out of respect, valued health professionals' guidance, but the management guidelines were not inclusive about how participants could meet these guidelines, yet still be highly respected with anga faka-Tonga, Tongan cultural values, in New Zealand society. The challenge for ongoing research and health service delivery is to address this dilemma.

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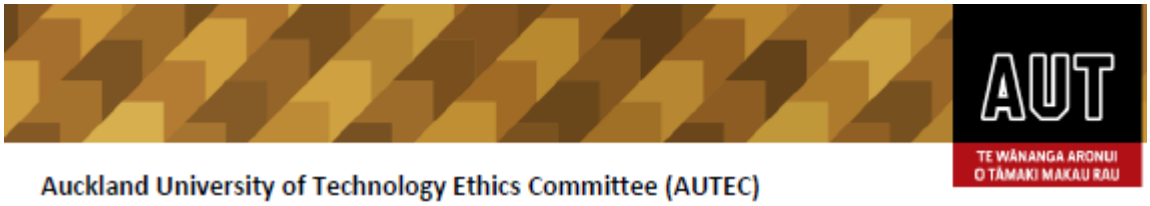
Appendices

Appendix A: AUTEC approval letter



Auckland University of Technology Ethics Committee (AUTEC)

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28 November 2018

Gael Mearns
Faculty of Health and Environmental Sciences

Dear Gael

Re Ethics Application: **18/400 The meaning of food: The lived experience of Tongan people with diabetes in New Zealand**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 28 November 2021.

Non-Standard Conditions of Approval

1. Remove the offer regarding checking transcripts from the group talanoa Information Sheet.

Non-standard conditions must be completed before commencing your study. Non-standard conditions do not need to be submitted to or reviewed by AUTEC before commencing your study.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through http://www.aut.ac.nz/research/researchethics.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through http://www.aut.ac.nz/research/researchethics.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: http://www.aut.ac.nz/research/researchethics.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation, then you are responsible for obtaining it. If the research is undertaken outside New Zealand, you need to meet all locality legal and ethical obligations and requirements. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

For any enquiries, please contact ethics@aut.ac.nz

Yours sincerely,

Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: soana_m@xtra.co.nz; Liz Smythe; Sione Vaka

Appendix B: Participant Information Sheet (English) – Individual Talanoa

Participant Information Sheet (English) – Individual Talanoa

Date Information Sheet Produced: 1 November 2018

Project Title

The meaning of food: the lived experience of Tongan people with Type 2 diabetes mellitus in New Zealand.

Invitation

Malo e lelei, my name is Soana Muimuiheata. I am currently undertaking the Doctor of Health Science programme at Auckland University of Technology (AUT). I am inviting you to participate in my research during which you will share your stories and lived experiences of diabetes and food. Diabetes is an issue for our Tongan families and communities.

Your participation is voluntary and if you change your mind about participating in the research at any time during the research, then you are free to withdraw at any time during the research.

What is the purpose of this research?

This research aims to explore the meaning of food and its related practices through listening to the stories of Tongans with Type 2 diabetes, examined to determine if there are any patterns or themes or principles, which underlie food choice, food consumption and the value of food in Tongan culture.

How was I identified and why am I being invited to participate in this research?

I will be attending and presenting at scheduled Tongan community and church meetings in November and December 2018. At these meeting, I will explain the research project and the recruitment process. This includes going through the selection process for being a participant. An invitation will be given to participate in the research. In addition, information sheets will be handed out and a list of interested participants will be collected at the end of the meeting. A follow up contact will be made only with expression of interest within a month.

Selection of participants: The inclusion criteria for participating in the research are

- Participants will be Tongan descent and lived in New Zealand
- Participants will have Type 2 Diabetes and are willing to share their stories in this study
- Participants will be over 18 years old and able to participate in this study
- Participants can be closely involved with food preparation for Tongan family members with Type 2 Diabetes

How do I agree to participate in this research?

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

I will be collecting data using an interview schedule and would appreciate being able to interview you at a suitable time and mutually agreed designated venue. Interviews will take place from December 2018 to February 2019, at a time that is suitable to you. Interviews will be conducted in privacy and will be no longer than two hours. I will also be asking you to sign a consent form regarding this research, prior to the interview. I will be digitally recording your stories and your contribution. I will provide transcript for you to check for accuracy before data analysis is undertaken. The research findings will be used for future academic publications and conference presentations. The completed thesis will be presented as a gift to the Tongan community and church group in 2020.

What are the discomforts and risks?

No risks and discomforts are anticipated. Your participation will be treated with utmost respect as in the practice of maintaining relationships (tauhi va) which is paramount in the Tongan culture. However, if at any time you want to stop the interview or move on to another question we can do so. If you choose to stop the interview I will do so without any consequences to you and the data from your interview will be destroyed.

How will these discomforts and risks be alleviated?

There is a chance you may feel uncomfortable with some of the questions. If during the interview (individual or focus group) you feel uncomfortable with answering any question, there is no problem with you declining to answer the question/s or withdrawing from the interview at any time.

What are the benefits?

As noted, this data will valuably inform community, New Zealand government planning and policies on food practices and dietary services for people with diabetes. It will also add to the international research base on diabetes.

This thesis will help me obtain a Doctor of Health Science qualification. Furthermore, this ethnic specific research will contribute, extend and enrich the knowledge base of why food practices and dietary management can be improved for Tongans in New Zealand.

How will my privacy be protected?

Your privacy will be protected by excluding your name and any association with church, community, family/clan, or social groups from this research. I will not engage in casual conversation while conducting the focus group and will ensure that the conversations are not overheard or repeated by others.

What are the costs of participating in this research?

The cost of your participation in this study will be your time of up to 2 hours.

What opportunity do I have to consider this invitation?

Once you receive the participant information sheet, I will contact you within a month to confirm if you agree to participate in the research.

What do I do if I have concerns about this research?

If you have any concerns regarding the nature, you may contract my supervisor from AUT, Dr Gael Mearns, gael.mearns@aut.acn.nz, phone +64 9 921 9999 ext 7108

Also, if you have concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Kate O'Connor, *ethics@aut.ac.nz* , phone +64 9 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Researcher contact: Soana Muimuiheata, soana_m@xtra.co.nz, +64 9 921 9999 ext 7003

Project Supervisor: Dr Gael Mearns, gael.mearns@aut.ac.nz , + 64 9 921 9999 ext 7108

I do hope that you find this study of interest and will agree to participate as your contributions will be extremely valuable

I look forward to working on this project with you.

Thank you so much/Malo 'aupito

Soana Muimuiheata
Doctor of Health Science (DHSc) student,
Auckland University of Technology (AUT)

Approved by the Auckland University of Technology Ethics Committee on 28 November, 2018, AUTEC Reference number 18/400.

Appendix C: Participant Information Sheet (Tongan) – Individual Talanoa

Participant Information Sheet (Tongan): Pepa Fakamatala ki he Fekumi´ ni

'Aho na'e fa'u ai : 'aho 1, Novema, 2018

Hinoga 'o e Polokalama: **Ko e 'uhinga 'o e me'atokoni: ko e taukei 'i he mo'ui 'a e kakai Tonga nofo Nu'usila 'oku ma'u 'e he suka kalasi 2.**

Fakaafe

Mālō e lelei, ko hoku hingoa ko Soana Muimuiheata. 'Oku ou lolotonga ako ki he Toketā e Saienisi 'o e Mo'ui´ (Doctor of Health Science) 'i he 'Univesiti Fakatekinolosia 'o 'Aokalani (Auckland University of Technology (AUT). 'Oku ou fakaafe'i atu ko e ke ke kau mai mu'a ki he'eku fekumi´ ni, 'a ia te ke talanoa 'o vahevahe ai ho'o ngaahi a'usia mo e taukei 'o e mo'ui fekau'aki mo e mahaki suka´ mo e me'atokoni´. Ko e mahaki suka´ ko e palopalema ia 'i hotau ngaahi fāmili Tonga´ mo hotau komiunitī.

'Oku tau'atāina pe ke ke kau mai´ pea kapau 'e liliu ho'o fakakaukau fekau'aki mo ho'o kau mai´ ki he fekumi´ ni 'i ha fa'ahinga taimi pe´ lolotonga 'a e fekumi´ ni, pea 'oku 'ataa pe ke ke nofo 'i ha fa'ahinga taimi´.

Ko e hā 'a e taumu'a 'o e fekumi´ ni?

Ko e taumu'a 'o e fekumi´ ni, ke vakai'i 'a e 'uhinga 'o e me'atokoni´ mo e anga hono ngāue'aki´ 'o fakafou 'i he fanongo mei he ngaahi talanoa 'a e kakai Tonga mo e mahaki suka kalasi 2´, 'a ia 'e vakai'i´ kapau 'oku 'i ai ha ngaahi sīpinga´, taumu'a´ pē tefito'i mo'oni´, 'oku makatu'unga mei ai e fili 'o e me'atokoni´, founga ma'u 'o e me'atokoni´ pea mo e mahu'inga 'o e me'atokoni´ 'i he 'ulungaanga faka-tonga´.

'E anga fēfē hono fili au´ pea mo e 'uhinga hono fakaafe'i au ke u kau ai ki he fakatotolo ni?

Te u kau atu ki he ngaahi fakataha'anga fakasiasi´ pē fakakolo 'a e kakai Tonga´ 'i Novema ki Tisema 2018 'o fakamatala'i ai 'a e fekumi´ ni. 'I he ngaahi fakataha´ ni, te u fakamatala ai ki he fekumi´ ni´ mo e founga hono fili´. 'Oku kau foki heni mo e founga hono fili ai ha taha ke kau mai´ pea 'e 'oatu ai 'a e fakaafe ke kau mai. Tānaki atu ki ai, ko e pepa fakamatala 'e tufa atu, pea 'e toki tānaki mai leva 'a e lisi 'o kinautolu 'oku nau fie kau mai´ 'i he faka'osinga 'o e fakataha´. 'E to e fai 'a e fetu'utaki atu lolotonga 'a e māhina 'e taha´ 'i he 'uhinga pē 'e taha´ ko e fakahaa'i 'o e mahu'inga 'ia´.

Fili 'o e fa'ahinga ke kau mai. Ko e ngaahi makatu'unga´ leva eni,

- Tokotaha Tonga koe´ 'oku ke nofo 'i Nu'usila´ ni.
- Tokotaha 'oku ne ma'u 'a e Suka (kalasi 2)´ pea loto lelei ke vahevahe 'ene ngaahi talanoa 'i he fekumi´ ni.
- Tokotaha kuo 'osi ta'u 18´ pe lahi ange, pea 'e lava 'o kau mai ki he fekumi´ ni.
- Tokotaha 'oku fekau'aki vāofi mo hono teuteu'i 'o e me'atokoni ma'ae mēmipa 'o e fāmili 'oku suka kalasi 2.

'E anga fēfē 'eku loto ke u kau 'i he fekumi´ ni?

'Oku tuku tau'ataina pe 'a ho'o kau mai ki he fekumi´ ni (ko ho'o fili pe), pē te ke fili ke kau mai´ pē 'ikai´ ka 'e 'ikai kau lelei ia´ pe kau kovi kiate koe´. 'E malava pe ke ke nofo mei he fekumi´ ni 'i ha fa'ahinga taimi pe´. Kapau leva 'oku ke loto ke nofo mei he fekumi´ ni, pea 'e 'oatu leva ke ke fili´ pē 'e to'o 'a e ngaahi fakamatala 'oku 'iloa na'a ke fai´ pē ko e faka'ata´ ke hoko atu pe hono ngāue'aki. Kaikehe, ko 'ene tuku atu pe 'a e ola 'o e fekumi´ ni, ko e fiema'u ke to'o ha'o ngaahi fakamatala´ 'e 'ikai to e malava ia.

Ko e hā e me'a 'e hoko 'i he fekumi´ ni?

Teu tānaki 'a e ngaahi fakamatala´ 'i he taimi talanoa´, pea 'oku ou hounga'ia he ma'u ha faingamālie ke faka'eke'eke ai koe´ 'i ha taimi pau mo ha feitu'u pe te ta felotoi ke fakataha ki ai. Ko e faka'eke'eke 'e fai ia he vaha'a 'o Nōvema 2018 ki Fepueli 2019 'i ha taimi 'e faingamālie kiate koe. Ko e talanoa faka'eke'eke 'e fai pe ia 'i ha feitu'u fakapulipuli´ pea he 'ikai to e lōlōa ange he houa 'e ua. Te u kole atu kiate koe´ ke ke fakamo'oni he pepa felotoi ke kau ki he fekumi´ ni, kimu'a pea toki kamata 'eta talanoa. Te u hiki tepi'i foki e ngaahi fakamatala´ ko e 'ai pe ke tokoni ki he fekumi´ ni. Te u 'oatu kiate koe´ 'a e tatau hono hiki tohi 'eta talanoa´ ke ke vakai'i pe 'oku tonu´ kimu'a ia pea toki fai hono 'analaiso. Ko e ola 'o e fekumi´ ni 'e ngāue'aki he kaha'u ki he fa'u e ngaahi tohi fakaako, pē fakahā'i atu he ngaahi konifelenisi´. Ka koe tohi kakato 'o e fekumi´ ni´ 'e foaki atu ia ko e me'a'ofa ki he komuinitī Tonga´ mo e ngaahi kulupu fakasiasi´ he 2020.

Ko e hā e uesia mo e ngaahi fakatamaki 'o e fekumi' ni?

'Oku 'ikai ha uesia kovi pe fakatamaki'. Ko ho'o kau mai' kuopau ke tauhi'aki 'a e anga faka'apa'apa' ko e fakasino 'o e tauhi vā, he 'oku mahu'inga ia 'i hotau anga fakafonua'. Kaekehe, kapau 'oku 'i ai ha taimi 'oku ke fie ta'ofi e faka'eke'eke' pē ko e hiki fakalaka ki ha fehu'i 'e taha' pea te mau fai ia'. Kpau 'oku ke loto ke ta'ofi e talanoa ia' pea teu fai ia' 'o 'ikai ha'ane kaunga kovi kiate koe' pea 'e faka'auha foki mo e ngaahi fakamatala mei ho faka'eke'eke.

'E anga fēfē hono ta'ofi ke 'oua e ai ha uesia pe fakatamaki?

'E ai pe nai ha taimi te ke ongo'i ta'efakafiemālie ki ha ngaahi fehu'i. Kapau 'e lolotonga pe 'a e talanoa (tautaha pe fakakulupu) 'oku ke ongo'i pehē ke tali e ha fehu'i, pea 'oku 'ikai ha palopalema ki he 'ikai tali e fehu'i' pē ko ho'o nofo mei he talanoa' 'i ha fa'ahinga taimi pe'.

Ko e hā e ngaahi lelei 'o e fekumi' ni?

Hangē kuo 'osi fakahā atu, ko e ngaahi fakamatala' ni 'e mahu'inga ia ke fakahā'i ki he komiunitī, tokoni ke fa'u 'a e ngaahi palani ngāue mo e lao 'a e pule'anga ki he founga ngaohi mo hono ma'u 'o e me'atokoni ma'ae kakai suka. 'E kau foki eni he ngaahi fakamatala ke ngāue'aki fakamamani lahi' ki he fakatotolo ki he mahaki suka'.

'E to e lava foki 'o fakakakato 'aki 'eku ako ki he mata'itohi Toketā e Saienisi 'o e Mo'ui. Tānaki atu ki ai, ko e fekumi ni' 'o fakatefito he matakali pe 'e taha' 'e tokoni 'o fakalahi mo fakakoloa ki he 'ilo loloto ki he 'uhinga 'oku totonu ke fakalakalaka ai 'a e founga ngaohi mo leva'i 'a e me'atokoni.

'E anga fēfē hono malu'i 'eku totonu fakafo'ituitui?

'E malu'i ho'o totonu fakafo'ituitui 'aki 'e 'ikai faka'asi ho hingoa' 'i ha fa'ahinga me'a 'o fekau'aki mo e siasi, komuinitī, fāmili pē ko ha fa'ahinga kulupu fakasōsiale 'i he fekumi' ni. 'E 'ikai te u kau ki he fa'ahinga talanoa anga maheni lolotonga e fakahoko e talanoa fakakulupu' pea fakapapau'i' ko e talanoa 'e 'ikai ongo na pe to e fakafoki 'e ha taha kehe'.

Ko e hā e totongi 'o 'eku kau 'i he fekumi' ni?

Ko e totongi pe ho'o kau ki he fekumi' ni' ko e houa 'e ua 'o ho taimi.

Ko e hā e faingamālie 'oku tuku mai ke u tali ai e fakaafe' ni ?

Ko ho'o ma'u pe 'a e pepa fakamatala ki he fekumi' ni, pea te u fetu'utaki atu leva lolotonga e māhina 'e taha' pe 'oku ke loto ke kau mai ki he fekumi' ni.

Ko e hā e me'a te u fai kapau 'oku 'i ai ha me'a 'oku ou tokanga ki ai fekau'aki mo e fekumi' ni?

Kapau 'oku ke fiema'u ha me'a fekau'aki mo e fekumi' ni, pea fetu'utaki ki he'eku supavaisa mei AUT, Dr Gael Mearns , gael.mearns@aut.acn.nz, telefoni +64 9 921 9999 ext 7108

Pea kapau 'oku ke fiema'u ha me'a fekau'aki mo hono fakahoko 'o e fekumi' ni, pea ke fetu'utaki ki he sekelitali 'o e Komiti AUTEC, Kate O'Connor, *ethics@aut.ac.nz* , telefoni+64 9 921 9999 ext 6038.

Ko hai te u fetu'utaki ki ai, 'okapau te u to e fiema'u ha fakaikiiki fekau'aki mo e fekumi' ni?

Kātaki 'o tauhi 'a e pepa fakamatala ni mo e tatau 'o e tohi felotoi ke kau ki he fekumi' ni ke ke ngāue'eki he kaha'u. 'Oku malava pe ke ke fetu'utaki ki he timi fekumi' ni 'oku hā atu' ni:

Fika fetu'utaki ki he tokotaha fekumi: Soana Muimuiheata, soana_m@xtra.co.nz, +64 9 921 9999 ext 7003

Supavaisa ki he Fekumi: Dr Gael Mearns, gael.mearns@aut.ac.nz , + 64 9 921 9999 ext 7108

'Oku ou faka'amu pe te ke maa'usia 'a e mahu'inga 'o e fekumi' ni' pea te ke tali ke kau mai, he ko e tokoni 'mātu'aki mahu'inga a'upito.

Mālō 'aupito

Soana Muimuiheata
Doctor of Health Science (DHSc) student,
Auckland University of Technology (AUT)

Approved by the Auckland University of Technology Ethics Committee on 28 November 2018 AUTEC Reference number 18/400.

Fakangofua mei he Komiti Lao 'a e 'Univesiti Fakatekinolosia 'a 'Aokalani 'i he 'aho 28 'o Novema, 2018, Fika ngāue'aki AUTEC 18/400

Appendix D: Consent form – Individual Talanoa

Consent Form for Individual Talanoa/ *Foomu Felotoi ki he Talanoa Taautaha*

Project title/Hingoa: ***The meaning of food: the lived experience of Tongan people with Type 2 diabetes mellitus in New Zealand Ko e 'uhinga 'o e me'atokoni: ko e taukei 'i he mo'ui 'a e kakai Tonga nofo Nu'usila 'oku ma'u 'e he suka kalasi 2.***

Project Supervisor/Supavaisa Fakatotolo: ***Dr Gael Mearns/ Toketā Gael Mearns***

Researcher/Tokotaha Fakatotolo: ***Soana Muimuiheata***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 1 November 2018. *Kuo u 'osi lau pea mahino'i 'a e ngaahi fakamatala fekau'aki mo e fakatotolo´ ni 'a ia 'oku hā 'i he pepa fakamatala 'o e 'aho 1 November 2018*
- ○ I have had an opportunity to ask questions and to have them answered/*Na'a ku ma'u faingamālie ke 'eke 'a e ngaahi fehu'i, pea ma'u mai foki mo hono tali´.*
- ○ I understand that notes will be taken during the Talanoa (interviews) and that they will also be audio-taped and transcribed. *'Oku ou mahino'i 'e hiki tohi e fakamatala nounou pe´ he lolotonga 'a e talanoa´, pea 'e to e lekooti foki 'i he tepi´ pea 'e hiki tohi hano tatau´.*
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way. *'Oku ou mahin'i, 'oku ou fili tau'ataina pe´ ke u kau 'i he fakatotolo ni, pea 'oku 'ataa pe foki´ ke u nofo mei he fakatotolo´ 'i ha fa'ahinga taimi pe´, 'o 'ikai ha'ane kau kovi kiate au´ 'i ha fa'ahinga founga´.*
- ○ I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.

  'Oku ou mahino'i kapau te u nofo mei he fakatotolo´ni, 'e 'omi ke u fili´ pe 'e to'o 'a e ngaahi fakamatala 'oku 'iloa na'a ku fai´ pē ko 'eku faka'ata ke hoko atu pe hono ngāue'aki. Kaikehe, ko 'ene tuku atu pe 'a e ola 'o e fakatotolo´ ni, ko e to'o ha'aku ngaahi fakamatala´ 'e 'ikai ke malava ia.
- ○ I agree to take part in this research. *'Oku ou loto ke u kau 'i he fakatotolo´ ni..*
- ○ I wish to receive a summary of the research findings (please tick one) *'Oku ou faka'amu ke u ma'u ha tatau fakalukufua 'o e ola 'o e fakatotolo´ ni (kātaki faka'ilonga'i 'a e taha)* : Yes/'Io ○ pe No/'Ikai ○

Participant's signature/*Fakamo'oni hingoa e tokotaha 'oku fakatotolo'i:* .....

Participant's name/Hingoa e tokotaha 'oku fakatotolo'i: .....

Participant's Contact Details (if appropriate)/ Fetu'utaki *Fakaikiiki 'o e tokotaha 'oku fakatotolo'i (kapau 'oku malava):*

.....

.....

.....

.....

Date/'Aho: _____

Approved by the Auckland University of Technology Ethics Committee on/Faka'atā 'e he Komiti Fakalao 'a e 'Univesiti Fakatekinolosi 'o 'Aokalani 'i he 'aho 28 Novema, 2018, AUTEC Reference number/Fika Ngāue 18/400

Note/Fakatokanga'i: The Participant should retain a copy of this form/'Oku totonu ke ma'u 'e he tokotaha 'oku kau 'i he fakatotolo ha tatau 'o e foomu´ ni.

Appendix E: Closing Prayer - Individual Talanoa

Lotu tuku (Closing Prayer): Individual Talanoa

Tupouha'amea (T2DM, Church Minister)

Puke hoku ongo nima...pea ne lotu.

Ma fakafeta'i atu 'e 'Otua, he ma'u e māfana e feohi he 'aho ni, koe'uhi na'e 'i heni ho Laumālie. Na'a ma fakaafe'i koe 'e 'Otua, ke ke ha'elea 'ema ki'i pō talanoa. 'Oku ma fakafeta'i atu kiate koe. 'Eiki 'oku mau kole fakamolemole atu, 'oku lahi 'emau tō nounou, tatau pē he siasi, tatau pē he famili. Ko e lotu 'o e houa ko 'eni 'e 'Otua, 'a 'ema fiefia, ko ho'o kau mai he pō talanoa.

Hangē pe koe ongo tangata na'a na fononga ki 'Emeasi. Neongo na'a na talanoa'i pe 'a e Toetu'u 'a e 'Afiona, kapau na'e 'ikai te ke fakaofiofi atu, 'o kau he pōtalanoa, he'ikai 'ā hona mata. 'Oku pehē pe 'a e fatongia 'o e 'aho ko'eni 'e 'Otua mo e lotu 'oku fai ma'a Soana. 'Eiki e, tuku mu'a ke ke tapuekina 'a Soana, ngaahi lotofale 'oku ne fononga ai, tuku ke ha pea e'a ai 'a e 'Afiona. 'A e ngāue 'oku ne fai, mo e feinga ako 'oku ne fai. Koe'uhi 'e 'Otua, 'ikai ngata he fakalakalaka 'a e famili, tuku foki 'e 'Otua ke fakalakalaka 'i he Siasi, kae'uma'a 'a e komiuniti kotoa pe.

'Eiki e, 'oku mau fakamālō atu he ma'u poto 'a e 'Afiona ma'a e kaunanga. Ko e me'a mahu'inga 'e 'Otua, ko e 'ilo atu ki he 'Afioná. Talamai 'e he Sāme, kuo fakahaofi kimautolu, koe'uhi kuo mau 'ilo 'a e huafa 'o e Afioná. Ko e 'ilo ia 'oku ma ma'u, pea teke ai ho ma fakahaofi 'i he ako 'oku fai 'e Soana, mo e poupou 'oku mau fai. Te ke 'ai ke mau ma'olunga, koe'uhi 'oku mau feohi mo e 'Afiona.

'E 'Otua e, 'oku mau hanga atu, 'o kole ai pe 'a maama 'a e 'Afiona. Kau mai si'i Soana. Talamai ke mau 'alu atu pe kiate koe pea ko 'emau lotu ia he houa ni. Tuku mu'a ke mo fe'ao mo Soana, fai 'a e fatongia ni. 'Oku hange ko e 'uluaki lotu, 'Otua, 'a e tapuaki kuo ke 'oange ma'a Soana. Neongo ko e akó 'oku 'ikai ko ha me'a 'oku faingofua, ka 'oku mau hanga atu 'e 'Otua, 'ai ke ne loto to'a, 'ai pe ia ke tu'u kalikali, 'oua na'a manavahe, pea 'oua na'a ilifia. Koe'uhi ko ha ngaahi fakafe'atungia 'o 'ene fai interview pea mo e ako 'oku ne fai. Tuku ke mahino kia Soana, ko koe Sihova 'oku mo fononga pea 'e ikuna 'a e taumu'a 'oku ne lolotonga fononga'ia. 'Eiki e, 'oku mau hanga hake, tapuaki mai ia, kae'uma'a 'a e famili hono kotoa pe. Mo e kau interview kotoa pe, 'e fai ha talanoa. Tuku pe ke nau fiefia kotoa pe he faingamalie.

'Oku mau fakamālō atu, mālō mu'a e afe mai 'a e 'Afiona, kouna hono loto ke fakaafe'i au. Ko e fatongia ko ia 'e 'Otua, 'oku mau fakamālō atu. Tuku pe ke mau nofo pe 'o 'ilo'i, 'oku ke mafeia 'a e me'a kotoa pe, 'a kinautolu 'oku mā fakakaukaua 'e he 'Afiona. Tapuaki mai ā 'a e feohi 'oku ma fai 'e 'Otua, tuku ke ma matuku 'i he fiefia mo e 'ofa 'a e 'Afiona. Kau mai 'ia Soana, kau mai 'ia Tevita kae'uma'a 'a e fānau, mo e makapuna. Ke mau kei nofo atu ko ho'o fānau pea ke 'afio mai ko e Tamai 'ofa.

'Oku mau hū 'eni, 'o kole 'eni 'i he kelesi 'a hotau 'Eiki, ko hotau 'Otua, pea mo e feohi 'a e Laumālie Ma'oni'oni, ke nofo'ia ai pe ho'o 'alo'ofa 'ia Soana mo e ako 'oku fai, 'oua na'a hili, kae fai 'o ta'engata. 'Emeni.

English Translation – Closing Prayer Individual Talanoa

Tupouha'amea (T2DM, Church Minister)

Holding my hands and pray

We praise you God for our warmth fellowship today because of your presence in spirit. We invited you to bless our conversation and we praise you. Lord, forgive us, as we fall short in many things, in church, in our families. This is our prayers, as we are grateful for your presence in our talanoa. As with the two men who went to Emmaus, they were talking about your resurrection and because you walked along them and joined their conversation, they were able to see you. It is like our conversation (duty) today. This is my prayer for Soana, God bless Soana, the homes she will enter, may you shine upon her, in the work she is doing, in her study because it is not only for the family advantages, but for the church and all our communities.

Lord, we thank you for the wisdom bestowed on your servant, and most importantly that she knows you. As the psalm says that we have been saved because we know your name. That is what we have, we are saved by Soana's research and our support. You lifted us high, because of our relationship with you, Lord.

God, we asked for your light, shined upon Soanaa. As you have told us to come to you, that is our prayer. Please be with Soana in her call for duty. As with our opening prayer, you have blessed Soana. Though study is not an easy task, but we pray to strengthen her, let her stand strong, fear not and be not dismayed because of any barriers toward her interview and her study. Grant understanding and let Soana knows that she is with you and she will achieve her goals. Lord, we pray to bless her and all her family and everyone she will interview and talanoa with. May they be happy for the opportunity. I thank you Lord for her heart to invite me, as I am grateful for this opportunity. Let us live and know that you can do everything, in all these things through you Lord. Bless our fellowship and let us depart with your joy and love. God be with Soana, be with Tevita and our children, our grandchildren. Let us live as your children and you are our loving father.

We asked all these in your grace, our Lord and fellowship with Holy Spirit to be with us, your love with Soana and her study, today and forever. Amen

Appendix G: Confidentiality Form Signed by Transcriber

Appendix G: Confidentiality Agreement - Transcriber

Project title: ***The meaning of food: the lived experience of Tongan people with Type 2 diabetes in New Zealand.***

Project Supervisor: ***Dr Gael Mearns***

Researcher: ***Soana Muimuiheata***

- ✓ I understand that all the material I will be asked to transcribe is confidential.
- ✓ I understand that the contents of the tapes or recordings can only be discussed with the researchers.
- ✓ I will not keep any copies of the transcripts nor allow third parties access to them.

Transcriber's signature: .....

Transcriber's name: Siosiana Afoa

Transcriber's Contact Details (if appropriate):

2 Watson Ave
Mt Albert
Auckland
Mob 021 1951 423

Date: 10-12-18

Project Supervisor's Contact Details (if appropriate):

Dr Gael Mearns: gael.mearns@aut.ac.nz 09 921-9999 ex 7108

Approved by the Auckland University of Technology Ethics Committee on type the date on which the final approval was granted AUTEC Reference number type the AUTEC reference number

Note: The Transcriber should retain a copy of this form.

Appendix F: Indicative Questions Guide for Individual Talanoa

Indicative Questions Guide

Individual Talanoa

Project title: *The meaning of food: the lived experience of Tongan people with Type 2 diabetes mellitus in New Zealand. (Ko e 'uhinga 'o e me'atokoni: ko e taukei 'i he mo'ui 'a e kakai Tonga nofo Nu'usila 'oku ma'u 'e he suka kalasi 2.*

Project Supervisor: *Dr Gael Mearns*

Researcher: *Soana Muimuiheata*

Introduction/Talitali mo e Fakafe'iloaki: Prayer/Lotu

Te ta talanoa fekau'aki mo e Suka. 'Oku a ipe ngaahi fehu'i fekau'aki mo e suka, me'akai, anga tauhi, fatongia fakataki. Te ta kamata pe talanoa 'aki ho'o fakamatala vahevahe ho'o a'usia.

1. Tell me about your diabetes? *Talanoa mai ange fekau'aki mo Suka?*
    - What does having diabetes mean to you? *'Oku fefe ho'o vakai ki ho suka?*
    - What is important about your diabetes? *Ko e ha me'a 'oku mahu'inga fekau'aki mo ho suka?*
    - What helps you to look after your diabetes? *Ko hai 'oku tokoni atu ki he tokanga'i ho suka*
    - What do you consider are the difficulties, challenges and barriers to control your diabetes? Ko e ha ha palopalema pe ha me'a 'oku faingata'a'ia ai ki hono tokonga'i ho suka?
    - What do you consider would help with your diabetes control? Ko e ha ha fa'ahinga tokoni 'oku ke fiema'u ke tauhi ho suka?
2. Tell me about what your food? Fefe anga ho'o ma'u me'atokoni
    - What do you choose to eat in relation to your diabetes? Ko e ha fa'ahinga me'akai 'oku ke kai koe'uhi he 'oku ke suka?
    - What is important for you in preparing, buying, eating and sharing food? Fefe e anga hono teuteu'i e me'akai? Fefe fakatau me'akai, ma'u me'atokoni. Fefe anga ho'omou kai 'i 'api, siasi pe ha fa'ahinga feitu'u?
    - Any particular food and nutrition rules you like or dislike? Why and Why not? Fefe ha fa'ahinga lao pe fale'i fakame'atokoni 'oku ke tauhi? Fa'ahinga me'a 'oku ke sai'ia ai pe 'ikai ke ke sai'ia ai?
    - Any particular food practices and/or protocol you follow? Why? Fefe ha fa'ahinga founga ma'u me'atokoni 'oku ke tauhi? Me'akai 'oku 'ikai te ke toe kai koe'uhi ko ho'o suka?
    - What do you consider would help with your food? Ko e ha me'a 'e tokoni atu ki ho'o kai?
    - What about a feast or special occasion you attend? Fefe taimi 'oku ke 'alu ki ha kai pola pe ha katoanga?
    - What do you eat when you are with other people? Fefe taimi 'oku ke kai ai mo ha kakai kehe?

- Give an example of how your food or eating is different when you have diabetes? Talanoa mai ange pe 'oku ai ha faikehekehe ho'o ma'u me'atokoni he taimi ni, fakahoa ki he taimi na'e te'eki ke ke suka ai?

3. What do you consider are the challenges and struggles of Tongan people with diabetes within New Zealand? Ko e ha palopalema 'oku fepaki mo e kakai tonga, 'oku nau suka , 'a ia 'oku nau nofo heni (NZ)?
4. Tell me what is it like to be diabetic in your family? Fefe anga ho'o ongo'i ko e tokotaha suka koe 'i ho famili?
5. What is it like to be diabetic in your church or community? Fefe anga ho'o suka he 'atakai 'o e Siasi mo e nofo fakakolo/komuniti?
6. Tell me what is like to be diabetic in New Zealand Fefe anga ho'o ssuka he fonua ni, Nu'usila?
7. Tell me more about.....(participant's words) Such questions aim for detailed stories about specific experiences in relation to their diabetes control Fefe ho'o a'usia pe ongo'i – fekau'aki mo ho suka?
8. What types of initiatives (social/cultural/political/economical) would you like to see implemented to help support your diabetes? Ko e ha nai ha fa'ahinga me'a 'oku ke fiema'u ke tokoni'i 'aki ho suka
    - **Fa'ahinga me'a fakatonga (culture), fakasosiale, fakapolitikale pe fakaekonomika?**
9. What types of initiatives would you like to see implemented to help with your food? Ko e ha me'a/polokalama 'oku ke fiema'u ke fakahoko, 'e tokoni ki he tauhi 'o ma'ume'atokoni?
10. What do you think policymakers need to know about the types of support systems which contribute to your food and diabetes? Ko e ha nai ha fa'ahinga me'a 'oku ke pehe 'oku mahu'inga ke 'ilo'i 'e he kakai 'oku nau fa'u e lao ke tokoni atu ki he me'akai mo e Suka?
11. Do you have any other comments you would like to contribute to this research? 'Oku ai me'a 'oku ke fie tanaki mai ki he fekumi/ako ko 'eni? Me'a 'oku mahu'ina ka 'oku te'eki ke ta talanoa ki ai.

Thank you/Fakamalo – Closing Prayers/Lotu Tuku

Approved by the Auckland University of Technology Ethics Committee on 28 November 2018 AUTEC Reference number 18/400

Appendix H: Crafted story

Individual Talanoa – T2DM, Health Professional Leader

Soana- What is it like to be diabetes in your family?

Mele - 'Oku ke 'ilo'i Soana homau household, 'oku we have changed over the years. 'Oku 'ikai te u to e fu'u hoha'a atu au ia ki he kai me'akai Tonga but of course sometimes we buy it hange ko e ngaahi me'a ko ee 'oku 'omai fakasiasi ko ee pea tufa. He koe basically all of us 'oku mau tui mautolu ki he tokoni ko ee ko ia. We want to help. So ko e taimi ia ko ee pe 'oku 'omai hamau famili mei Tonga ha me'akai Tonga. But we hardly go out and buy it anymore. Ko 'eku fine'eiki 'oku vili ia 'oku fail hono responsibility kapau 'oku 'ikai ha haka. So, it's taken us a long time ke 'i ai pe ha efiafi ke ō atu 'e 'ai ha haka ia kae takitaha ha'u pe 'o 'ai ha'ane ki'i kapaika mo ha'ane ki'i salad. So, we have made changes in our household, but it's taken a long time. Tau pehe pe in the last 16 years I can see changes but is very slow. And the best support in my family is my sister-in-law he 'oku tokanga ia ki he tauhi hono sino. Sai pe he 'oku 'ikai ke 'i heni 'a Fatai ia, vanity reasons pea 'oku 'ikai ke fu'u sino ia pea 'oku 'ikai pe ke fu'u sai'ia ia ke sino. So, she and I are on the same page. Ko 'eku fine'eiki na'e toki tuku ni pe he 'oku ta'u 92 'a e feinga pe ia ke ha'u 'o fai 'a e haka. Culturally, 'oku incomplete 'a e 'api kapau 'oku 'ikai ke 'i ai ha haka.

Crafted Story

Soana- What is it like to be diabetes in your family?

Mele - Ko homau household, we have changed over the years. 'Oku 'ikai te u to e fu'u hoha'a au ki he kai me'akai Tonga. Sometimes we buy it, ko e ngaahi me'a fakasiasi 'oku tufa mai. All of us, 'oku mau tui ki he tokoni ko ia. We want to help. 'Oku fa'a 'omai ha me'akai mei Tonga mei ha mau famili. But we hardly go out and buy it anymore.

Ko 'eku fine'eiki 'oku vili ia ke 'ai ha haka. Na'e toki tuku ni pe he 'oku ta'u 92. Na'e feinga pe ia ke ha'u 'o fai 'a e haka. Culturally, 'oku incomplete 'a e 'api kapau 'oku 'ikai ke 'i ai ha haka. 'Oku fail hono responsibility kapau 'oku 'ikai 'i ai ha haka. It has taken us a long time. Kuopau pe ke 'ai ha haka he efiafi, kae toki takitaha 'ai pe ha'ane kiki. Ko ha ki'i kapaika mo ha'ane ki'i salad. We have made changes in our household; it has taken a long time. It is very slow, but I have seen changes in the last 16 years.

The best support in my family, is my sister-in-law. 'Oku tokanga ke tauhi hono sino. It is for vanity reason. 'Oku 'ikai ke fu'u sino pea 'oku 'ikai ke fu'u sai'ia ia ke sino. So, she and I are on the same page.

Appendix I: Crafted story translated into English.

Translation – Crafted Story

Soana- What is it like to be diabetes in your family?

Mele – Our household have changed over the years. I do not bother to eat Tongan food. Except when we got it from church. All of us believed in helping others so will buy food from the church. We want to help. We used to get food from our relatives in Tonga. But we hardly go out of our way to buy some.

My mother insisted on cooking (meaning staple food). She always tried to prepare our food until lately as she is 92 years old now. Culturally, the home is incomplete without a cook meal. She failed to fulfil her responsibility if she does not cook. It has taken us a long time as there has to be a cook meal (staple food). Everyone can help themselves for a tin fish and some salad. We have made changes in our household. It has taken a long time, very slow and I have seen changes in the last 16 years.

My best support in the family, is my sister-in-law. She looks after herself for a vanity reason. She is not obese, and she does not want to be big. So, we are both on the same page.

Appendix J: Analysis Process – highlighted quotes, cut and paste

Themes - Identify Quotes – Individual Talanoa

Quotes: Highlight, cut and paste to match similar quotes (Highlight -Tupouha'amea quotes)

1. **Food is an obligation to serve God.**

Tupouha'amea: I have asked them [the congregation] to minimise providing food. They believed, it is giving to God. That is what makes them happy as they have been blessed by God through all their giving and offerings. They have shared their testimony. God has blessed them as well as their children. They just want to share it with others. For those young children who hang around church, they ensure that they are well fed.

2. **Food part of feasting**

Tupouta'anea: There were feasting in Tonga, but it was only in certain Sundays and important or significant days. There were adequate/sufficient amount of food provided. Here in New Zealand, provision of food has become a competition. It is about who provide the most food and feast

Na'e fai pe fakaafe ia 'i Tonga, ka ko e ngaahi Sapate 'aho mahu'inga pe. Na'e fakafuofua pe. Ka ko 'eni ia, 'oku 'alu ia ko e fe'auhi, koe 'ai pe ko e fakaafe 'a hai 'oku lahi taha, 'oku 'ikai ke mato'o ia.

Soft drinks – gifted as part of church occasions:

Taniela: Some people used it as gifts for special occasions. They presented four or five cartoons of soft drinks as gifts for the occasion. They are provided with pride, their obligations for church. It can be good as of their generosity but on the other side, it can cause more health problems/disadvantages. They don't know the danger of these drinks.

3. **Food gift to Minister**

Tupuoha'amea: *Mrs. Huni, the stewards' wife always bring food to my house. Whatever she got, she wants to serve and look after me as the church Minister. After the Wednesday church evening services, she already got pancakes with coffee for my supper. Other days, she would turn up at home with roast pork, cooked at their own oven at home. I was really spoilt by Mrs. Huni when I was stationed at their church. That was her service for me as Minister.*

Kotoni: *Families got plenty of staple food at home. Every time they received food from Tonga, they always give us food. I give away the cassava, as it is very bad for diabetic. Taro and giant taro (kape) could be as bad but I do not really like cassava. Now is the time of the year that there is a lot of Tongan food, started from Christmas. We tend to eat Tongan food every day especially boil giant taro (kape).*

4. **Food – gift for senior (elderly)**

Mele: At the feast, people would say "take some food with you". They put pressure on me, to take some food home for my mother. She is 92 years old and she tends to eat very little, as she aged. My family does not allow her to eat any leftover or reheated food as

she would get diarrhea. In a couple of times, I got home and thrown the food in the rubbish before I entered our house. I would rather put it in the rubbish as I might end up eating the food myself.

Christmas Gift for elderly church members

Tupouta'anea - Every Christmas, we prepared food baskets for our elderly members and the 80's years old. There were ten of them. The eldest will be 101 next month, then a 95 years and 89 years and the rest are 80 years old. Each food basket contain healthy food, which cost around $100 each. I have told my husband that we need to give our best. God blessed us with so much. We should not give up with doing good things.

5. Food – shares with others

Tupouta'anea: In most occasions, I give away the gift I received from them. It included but not limited to birthday cakes and cooked food ('umu). I believed that others would appreciate it more for their cup of tea. The cooked food can be shared with others as well. I rather give it to those who need it more than keep it for my family. Otherwise, the food would be wasted in my house. By giving away and sharing the food they gifted to the Minister, it would make them realized that I don't need their food

6. Food is core part of our Tongan culture

Kotoni: *Koe fo'i palopalema foki ia 'e taha 'a e fo'i fa'unga koe na'e fa'u 'aki kitautolu moe lotu. 'Oku 'a e kai koe fo'i konga mo'ui ia 'a 'etau ngaahi ouau lotu. 'Oku tau anga maheni pe 'i Tonga, 'oku pau ke 'ai e ki'i fakaafe. Kapau 'oku tau toko 7 kuopau ke 'ai 'ae ki'i fakaafe e tamasi'i kotoa pe 'ae ongo ki'i matu'a ee. Pea kuopau ke fai 'ae tokonaki ia ki ai.*

English: As Tongan, food is a foundation of our church structure. Food is a living component of our rituals. We are used to it, as we grew up with it in Tonga. We must offer a feast. If we have seven children, the parents must pledge one for each child. Everyone prepare and gather for it.

Salome: *Tongan feast means plenty of food*

Ko 'eku sio ki he 'etau ngaahi katoanga, 'oku 'ikai te u tui au 'oku ai ha faikehekehe. Ko 'etau 'ulungaanga fakafonua pe ia 'a kitautolu, ko e ngaahi e me'akai 'o totu'a, ke kai e kakai 'o makona pea to e lahi ke fa'o ke oo mo ia ki 'api.

English: In our traditional celebrations, I don't believe there is any differences among them. It is our own Tongan culture that we provide plenty of food so that people are well fed, and plenty of left over to take home.

Tupouta'anea *received food as part of ceremonial celebration:*

Tupouta'anea: One of the church's steward had a 21st birthday recently. The family brought home some Tongan mats, birthday cake plus a huge pig (puaka toho). These were all birthday gifts to the Minister. I did not participate in the celebration, as the daughter wants her grandmothers to bless her special day, which I can understand and respected. I did not expect anything as it was their family celebration. No, they turned

up home with these food and materials. The pig was too big and we need to share it. I thank them for their gift as a respect for me as their Minister. They did not have to, but it was part of the celebration. I understand that they are obliged to give for the Minister. Family counted it as a blessing, to give to God hence the gift to the church Minister.

Interpretation of what food means to Tongan people, Tongan worldview.

All participants are conscious with role of food in Tongan culture, church and community events. They are aware of the amount of food provided in a Tongan feast and the purpose and meaning of giving food. A difference between Tongan feasts in Tonga compared to feast in New Zealand context has been observed. However, being Tongan means that excess of food supply is a sign of wealth and position in the Tongan community.

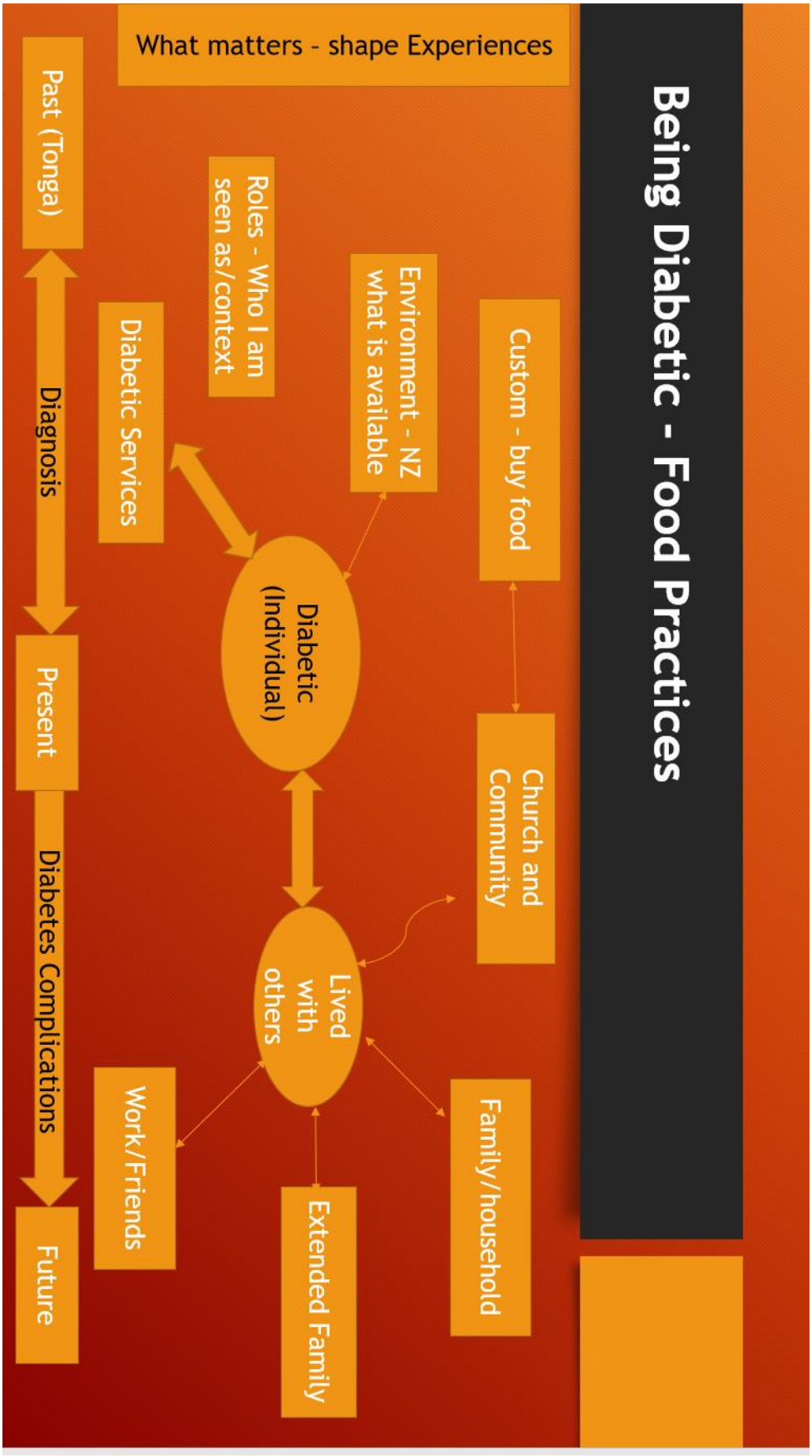
Food is provided as gift to honour God and the church and church Ministers receive these gifts as representative of God in the church. Being diabetic means that one should take responsibility to own food choices as food is not provided for health and diabetic reasons. Instead food is provided for religion and cultural reasons. It is to honour and respect God and others. Further, so often the choice of food is in the hands of the family, church and community who provide food.

Question for talanoa focus group:

How could Tongan worldview of food and giving be re considered?

How could Tongan ceremonial food be made healthier and appropriate for people with diabetes?

Appendix K: Emerging themes – summary from reflective journal



Appendix L: Participant Information Sheet – Group Talanoa

TE WĀNANGA ARONUI O TĀMAKI MAKAU RAU

Participant Information Sheet (Tongan): Pepa Fakamatala ki he Fekumi´ ni - Group Talanoa

'Aho na'e fa'u ai : 'aho 1, Novema, 2018

Hinoga 'o e Polokalama: **Ko e 'uhinga 'o e me'atokoni: ko e taukei 'i he mo'ui 'a e kakai Tonga nofo Nu'usila 'oku ma'u 'e he suka kalasi 2.**

Fakaafe

Mālō e lelei, ko hoku hingoa ko Soana Muimuiheata. 'Oku ou lolotonga ako ki he Toketā e Saienisi 'o e Mo'ui´ (Doctor of Health Science) 'i he 'Univesiti Fakatekinolosia 'o 'Aokalani (Auckland University of Technology (AUT). 'Oku ou fakaafe'i atu ko e ke ke kau mai mu'a ki he'eku fekumi´ ni, 'a ia te ke talanoa 'o vahevahe ai ho'o ngaahi a'usia mo e taukei 'o e mo'ui fekau'aki mo e mahaki suka´ mo e me'atokoni´. Ko e mahaki suka´ ko e palopalema ia 'i hotau ngaahi fāmili Tonga´ mo hotau komiunitī.

'Oku tau'atāina pe ke ke kau mai´ pea kapau 'e liliu ho'o fakakaukau fekau'aki mo ho'o kau mai´ ki he fekumi´ ni 'i ha fa'ahinga taimi pe´ lolotonga 'a e fekumi´ ni, pea 'oku 'ataa pe ke ke nofo 'i ha fa'ahinga taimi´.

Ko e hā 'a e taumu'a 'o e fekumi´ ni?

Ko e taumu'a 'o e fekumi´ ni, ke vakai'i 'a e 'uhinga 'o e me'atokoni´ mo e anga hono ngāue'aki´ 'o fakafou 'i he fanongo mei he ngaahi talanoa 'a e kakai Tonga mo e mahaki suka kalasi 2´, 'a ia 'e vakai'i´ kapau 'oku 'i ai ha ngaahi sīpinga´, taumu'a´ pē tefito'i mo'oni´, 'oku makatu'unga mei ai e fili 'o e me'atokoni´, founga ma'u 'o e me'atokoni´ pea mo e mahu'inga 'o e me'atokoni´ 'i he 'ulungaanga faka-tonga´.

'E anga fēfē hono fili au´ pea mo e 'uhinga hono fakaafe'i au ke u kau ai ki he fakatotolo ni?

Te u kau atu ki he ngaahi fakataha'anga fakasiasi´ pē fakakolo 'a e kakai Tonga´ 'i Novema ki Tisema 2018 'o fakamatala'i ai 'a e fekumi´ ni. 'I he ngaahi fakataha´ ni, te u fakamatala ai ki he fekumi´ ni´ mo e founga hono fili´. 'Oku kau foki heni mo e founga hono fili ai ha taha ke kau mai´ pea 'e 'oatu ai 'a e fakaafe ke kau mai. Tānaki atu ki ai, ko e pepa fakamatala 'e tufa atu, pea 'e toki tānaki mai leva 'a e lisi 'o kinautolu 'oku nau fie kau mai´ 'i he faka'osinga 'o e fakataha´. 'E to e fai 'a e fetu'utaki atu lolotonga 'a e māhina 'e taha´ 'i he 'uhinga pē 'e taha´ ko e fakahaa'i 'o e mahu'inga 'ia´.

Fili 'o e fa'ahinga ke kau mai. Ko e ngaahi makatu'unga´ leva eni,

- Tokotaha Tonga koe´ 'oku ke nofo 'i Nu'usila´ ni.
- Tokotaha 'oku ne ma'u 'a e Suka (kalasi 2)´ pea loto lelei ke vahevahe 'ene ngaahi talanoa 'i he fekumi´ ni.
- Tokotaha kuo 'osi ta'u 18´ pe lahi ange, pea 'e lava 'o kau mai ki he fekumi´ ni.
- Tokotaha 'oku fekau'aki vāofi mo hono teuteu'i 'o e me'atokoni ma'ae mēmipa 'o e fāmili 'oku suka kalasi 2.

'E anga fēfē 'eku loto ke u kau 'i he fekumi´ ni?

'Oku tuku tau'ataina pe 'a ho'o kau mai ki he fekumi´ ni (ko ho'o fili pe), pē te ke fili ke kau mai´ pē 'ikai´ ka 'e 'ikai kau lelei ia´ pe kau kovi kiate koe´. 'E malava pe ke ke nofo mei he fekumi´ ni 'i ha fa'ahinga taimi pe´. Kapau leva 'oku ke loto ke nofo mei he fekumi´ ni, pea 'e 'oatu leva ke ke fili´ pē 'e to'o 'a e ngaahi fakamatala 'oku 'iloa na'a ke fai´ pē ko e faka'ata´ ke hoko atu pe hono ngāue'aki. Kaikehe, ko 'ene tuku atu pe 'a e ola 'o e fekumi´ ni, ko e fiema'u ke to'o ha'o ngaahi fakamatala´ 'e 'ikai to e malava ia.

Ko e hā e me'a 'e hoko 'i he fekumi´ ni?

Teu tānaki 'a e ngaahi fakamatala´ 'i he taimi talanoa´, pea 'oku ou hounga'ia he ma'u ha faingamālie ke faka'eke'eke ai koe´ 'i ha taimi pau mo ha feitu'u pe te ta felotoi ke fakataha ki ai. Ko e faka'eke'eke 'e fai ia he vaha'a 'o Nōvema 2018 ki Fepueli 2019 'i ha taimi 'e faingamālie kiate koe. Ko e talanoa faka'eke'eke 'e fai pe ia 'i ha feitu'u fakapulipuli´ pea he 'ikai to e lōlōa ange he houa 'e ua. Te u kole atu kiate koe´ ke ke fakamo'oni he pepa felotoi ke kau ki he fekumi´ ni, kimu'a pea toki kamata 'eta talanoa. Te u hiki tepi'i foki e ngaahi fakamatala´ ko e 'ai pe ke tokoni ki he fekumi´ ni. Te u 'oatu kiate koe´ 'a e tatau hono hiki tohi 'eta talanoa´ ke ke vakai'i pe 'oku tonu´ kimu'a ia pea toki fai hono 'analaiso. Ko e ola 'o e fekumi´ ni 'e ngāue'aki he kaha'u ki he fa'u e ngaahi tohi fakaako, pē fakahā'i atu he ngaahi konifelenisi´. Ka koe tohi kakato 'o e fekumi´ ni´ 'e foaki atu ia ko e me'a'ofa ki he komuinitī Tonga´ mo e ngaahi kulupu fakasiasi´ he 2020.

Ko e hā e uesia mo e ngaahi fakatamaki 'o e fekumi' ni?

'Oku 'ikai ha uesia kovi pe fakatamaki'. Ko ho'o kau mai' kuopau ke tauhi'aki 'a e anga faka'apa'apa' ko e fakasino 'o e tauhi vā, he 'oku mahu'inga ia 'i hotau anga fakafonua'. Kaekehe, kapau 'oku 'i ai ha taimi 'oku ke fie ta'ofi e faka'eke'eke' pē ko e hiki fakalaka ki ha fehu'i 'e taha' pea te mau fai ia'. Kpau 'oku ke loto ke ta'ofi e talanoa ia' pea teu fai ia' 'o 'ikai ha'ane kaunga kovi kiate koe' pea 'e faka'auha foki mo e ngaahi fakamatala mei ho faka'eke'eke.

'E anga fēfē hono ta'ofi ke 'oua e ai ha uesia pe fakatamaki?

'E ai pe nai ha taimi te ke ongo'i ta'efakafiemālie ki ha ngaahi fehu'i. Kapau 'e lolotonga pe 'a e talanoa (tautaha pe fakakulupu) 'oku ke ongo'i pehē ke tali e ha fehu'i, pea 'oku 'ikai ha palopalema ki he 'ikai tali e fehu'i' pē ko ho'o nofo mei he talanoa' 'i ha fa'ahinga taimi pe'.

Ko e hā e ngaahi lelei 'o e fekumi' ni?

Hangē kuo 'osi fakahā atu, ko e ngaahi fakamatala' ni 'e mahu'inga ia ke fakahā'i ki he komiunitī, tokoni ke fa'u 'a e ngaahi palani ngāue mo e lao 'a e pule'anga ki he founga ngaohi mo hono ma'u 'o e me'atokoni ma'ae kakai suka. 'E kau foki eni he ngaahi fakamatala ke ngāue'aki fakamamani lahi' ki he fakatotolo ki he mahaki suka'.

'E to e lava foki 'o fakakakato 'aki 'eku ako ki he mata'itohi Toketā e Saienisi 'o e Mo'ui. Tānaki atu ki ai, ko e fekumi ni' 'o fakatefito he matakali pe 'e taha' 'e tokoni 'o fakalahi mo fakakoloa ki he 'ilo loloto ki he 'uhinga 'oku totonu ke fakalakalaka ai 'a e founga ngaohi mo leva'i 'a e me'atokoni.

'E anga fēfē hono malu'i 'eku totonu fakafo'ituitui?

'E malu'i ho'o totonu fakafo'ituitui 'aki 'e 'ikai faka'asi ho hingoa' 'i ha fa'ahinga me'a 'o fekau'aki mo e siasi, komuinitī, fāmili pē ko ha fa'ahinga kulupu fakasōsiale 'i he fekumi' ni. 'E 'ikai te u kau ki he fa'ahinga talanoa anga maheni lolotonga e fakahoko e talanoa fakakulupu' pea fakapapau'i' ko e talanoa 'e 'ikai ongo na pe to e fakafoki 'e ha taha kehe'.

Ko e hā e totongi 'o 'eku kau 'i he fekumi' ni?

Ko e totongi pe ho'o kau ki he fekumi' ni' ko e houa 'e ua 'o ho taimi.

Ko e hā e faingamālie 'oku tuku mai ke u tali ai e fakaafe' ni ?

Ko ho'o ma'u pe 'a e pepa fakamatala ki he fekumi' ni, pea te u fetu'utaki atu leva lolotonga e māhina 'e taha' pe 'oku ke loto ke kau mai ki he fekumi' ni.

Ko e hā e me'a te u fai kapau 'oku 'i ai ha me'a 'oku ou tokanga ki ai fekau'aki mo e fekumi' ni?

Kapau 'oku ke fiema'u ha me'a fekau'aki mo e fekumi' ni, pea fetu'utaki ki he'eku supavaisa mei AUT, Dr Gael Mearns , gael.mearns@aut.acn.nz, telefoni +64 9 921 9999 ext 7108

Pea kapau 'oku ke fiema'u ha me'a fekau'aki mo hono fakahoko 'o e fekumi' ni, pea ke fetu'utaki ki he sekelitali 'o e Komiti AUTEC, Kate O'Connor, *ethics@aut.ac.nz* , telefoni+64 9 921 9999 ext 6038.

Ko hai te u fetu'utaki ki ai, 'okapau te u to e fiema'u ha fakaikiiki fekau'aki mo e fekumi' ni?

Kātaki 'o tauhi 'a e pepa fakamatala ni mo e tatau 'o e tohi felotoi ke kau ki he fekumi' ni ke ke ngāue'eki he kaha'u. 'Oku malava pe ke ke fetu'utaki ki he timi fekumi' ni 'oku hā atu' ni:

Fika fetu'utaki ki he tokotaha fekumi: Soana Muimuiheata, soana_m@xtra.co.nz, +64 9 921 9999 ext 7003

Supavaisa ki he Fekumi: Dr Gael Mearns, gael.mearns@aut.ac.nz , + 64 9 921 9999 ext 7108

'Oku ou faka'amu pe te ke maa'usia 'a e mahu'inga 'o e fekumi' ni' pea te ke tali ke kau mai, he ko e tokoni 'mātu'aki mahu'inga a'upito.

Mālō 'aupito

Soana Muimuiheata
Doctor of Health Science (DHSc) student,
Auckland University of Technology (AUT)

Approved by the Auckland University of Technology Ethics Committee on 28 November, 2018 AUTEC Reference number 18/400.

Fakangofua mei he Komiti Lao 'a e 'Univesiti Fakatekinolosia 'a 'Aokalani 'i he 'aho 28 'o Novema, 2018, Fika ngāue'aki AUTEC 18/400

Appendix M: Consent form – Group Talanoa

Consent Form for Group Talanoa/ *Foomu Felotoi ki he Talanoa Faka-kulupu*

Project title/Hingoa: *The meaning of food: the lived experience of Tongan people with Type 2 diabetes mellitus in New Zealand/ Ko e 'uhinga 'o e me'atokoni: ko e taukei 'i he mo'ui 'a e kakai Tonga nofo Nu'usila 'oku ma'u 'e he suka kalasi 2.*

Project Supervisor/Supavaisa Fakatotolo: *Dr. Gael Mearns/Toketā Gael Mearns*

Researcher/Tokotaha Fakatotolo: *Soana Muimuiheata*

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 1 November 2018. *Kuo u 'osi lau pea mahino'i 'a e ngaahi fakamatala fekau'aki mo e fakatotolo´ ni 'a ia 'oku hā 'i he pepa fakamatala 'o e 'aho 1 Novema, 2018*
- ○ I have had an opportunity to ask questions and to have them answered. *Na'a ku ma'u faingamālie ke 'eke 'a e ngaahi fehu'i, pea ma'u mai foki mo hono tali´.*
- ○ I understand that identity of my fellow participants and our discussions in the focus group is confidential to the group and I agree to keep this information confidential. *'Oku ou mahino'i 'e hiki tohi e fakamatala nounou pe´ he lolotonga 'a e talanoa´, pea 'e to e lekooti foki 'i he tepi´ pea 'e hiki tohi hano tatau´.*
- ○ I understand that notes will be taken during the focus group and that it will also be audio-taped and transcribed. *'Oku ou mahino'i 'e hiki tohi e fakamatala nounou pe´ he lolotonga 'a e talanoa´, pea 'e to e lekooti foki 'i he tepi´ pea 'e hiki tohi hano tatau´.*
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way. *'Oku ou mahin'i, 'oku ou fili tau'ataina pe´ ke u kau 'i he fakatotolo ni, pea 'oku 'ataa pe foki´ ke u nofo mei he fakatotolo´ 'i ha fa'ahinga taimi pe´, 'o 'ikai ha'ane kau kovi kiate au´ 'i ha fa'ahinga founga´.*
- ○ I understand that if I withdraw from the study then, while it may not be possible to destroy all records of the focus group discussion of which I was part, I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible. *'Oku ou mahino'i kapau te u nofo mei he fakatotolo´ni, 'e 'omi ke u fili´ pe 'e to'o 'a e ngaahi fakamatala 'oku 'iloa na'a ku fai´ pē ko 'eku faka'ata ke hoko atu pe hono ngāue'aki. Kaikehe, ko 'ene tuku atu pe 'a e ola 'o e fakatotolo´ ni, ko e to'o ha'aku ngaahi fakamatala´ 'e 'ikai ke malava ia.*
- ○ I agree to take part in this research. *'Oku ou loto ke u kau ki he fakatotolo´ ni.*
- ○ I wish to receive a summary of the research findings (please tick one) *'Oku ou faka'amu ke u ma'u ha tatau 'o e ola 'o e fakatotolo´ ni.i (Faka'ilonga'i)*: Yes/'Io ○ No/'Ikai ○

Participant's signature/Fakamo'oni hingoa e tokotaha 'oku fakatotolo'i: .....

Participant's name/Hingoa e tokotaha 'oku fakatotolo'i : .....

Participant's Contact Details (if appropriate)/ Fetu'utaki fakaikiiki 'o e tokotaha 'oku fakatotolo'i (kapau 'oku malava):

.....

.....

Date/Aho_____

Approved by the Auckland University of Technology Ethics Committee on/Faka'atā mei he Komiti Fakalao 'a e 'Univesiti Fakatekinolosia 'o 'Aokalani 'i he 'aho 'e he Va'a 'a e Univesiti Fakatekinikale 'o Okalani 'i he 'aho 28 Novema, 2018, AUTEC Reference number/Fika Ngāue 18/400

Note/Fakatokanga'i: The Participant should retain a copy of this form/'Oku totonu ke ma'u 'e he tokotaha 'oku kau 'i he Fakatotolo ha tatau 'o e foomu´ ni.

Appendix N: Opening Prayer – Group Talanoa

Soane (T2DM, Church Minister, Group 2)

Malo e tauhi lelei kuo fai, kuo fai ai e ikuna mo e polepole tu'unga pe ho'o 'ofa. Taumaia 'oku mau malava ha momo'i me'a 'e taha. Ka ko e kau mai 'a e 'Afiona, pea 'oku to'a ai 'a e vaivai. 'Oku mau fiefia ko e 'ikai ke mau kau 'i he tafe. Ka 'oku mau kei 'inasi he koloa 'o e mo'ui. 'Oku mau fakatahataha mai ki he malumalu 'o e fale ni, ko e 'ofa kuo fai, tu'unga pe 'i he faingata'a 'oku mau tofanga ai.

Ko ia 'oku fai atu ai 'a e kole tokoni ki ho'o 'Afio, ko koe pe 'oku 'a'au 'a e me'a kotoa pe. 'Oku 'ikai ha me'a ia 'e faingata'a ki he fofonga 'o e 'Afiona. Ka 'i he 'emau kole kiate koe 'i ho huafa, pea kuo ke afeitaulalo 'o fakamonu'ia 'a e ngaahi feinga kotoa pe. Pea 'oku pehe 'a e feinga 'oku fai 'e he kaunanga ko 'eni, Soana ko e 'ofa ki ho kakai koe'uhi ko e faingata'a 'oku tofanga ai 'a e to'utangata 'o e 'aho ko 'eni.

'E 'Otua fakamolemole, ka ke ha'ele mai ke tau ngāue. Manatua 'a e Faifekau mo e hoa, mo e ngaahi kupu felave'i kotoa pe 'oku mau kamata 'a e fatongia 'o e efiafi ko 'eni. Afeitaulalo 'a ho'o 'Afio pea ke fakakakato, pea ke talia 'a e lotu 'oku mau fai ni. Kole kotoa 'a e malohi ni, 'i he huafa 'o Sisu Kalaisi, ko e 'Alo, ka ko homau fakamo'ui. 'Emeni.

English (Opening Prayer) by Soane (T2DM, Church Minister, Group 2)

Thank you for looking after us. We are well and blessed because of your love. As if we can do anything. Your presence Lord, we are encouraged as you strengthen our weaknesses. We are grateful that we are here, being alive and enriched with precious life. We come together in this house, because of thy love/caring for us, because of our struggles.

We seek your help Lord as you own everything. There is nothing impossible to you Lord. Therefore, we ask these things in your name for you have blessed all our work. This is what Soana, your servant is trying to do, her love for your people, as we are suffering from this disease that affects our generation.

Lord, may you bless this work. Bless the Pastor and his wife, as well as everyone taking part, our call for duty in this afternoon. Please God, help make us whole, hear our prayers. We asked all these things in the mighty name of Jesus Christ, your son, and our saviour. Amen.

Appendix 0: Hiva/Song

SUKA MO E TAUHI VĀ (DIABETES AND MAITAINING RELATIONSHIIP)

Tulou mo e Langi ‘oku tau kakapa
Pouono ‘a hota laukau’anga
Folofola ‘a e maama ‘anga
Lotu mo e ako kuo ta a’usia
‘Ofa ‘Otua, fekau koula
Tauhi ‘aki hota Vā

Aotearoa mohu koloa
Ke hao mei he Suka
Makona he ‘ene ‘ofa
Kaveikoula ‘a Tonga
‘Ilo ‘Otua, ‘ilo’i kita
Feluteni ‘a e suka
Mata’i koloa ‘a e Tonga

Koloa fungani ‘o e Mo’ui
Temipale ke tauhi
Laumalie, Sino mo e ‘Atamai
Lōtolu ke mo’ui’aki
Talangofua mo ‘amanaki
Famili mo e Siasi

Inisulini, ‘oku ilifia’i
Suka te te kui ai
Faingata’a’ia mo mamahi
Loto mo e ‘atamai
Tui te ke lava ai
‘Ofa mo e ‘amanaki

Tau
‘Eiki ke tapuaki Me’atokoni
Hanga ‘o foaki mai
Ha ivi ke tokoni mai
Ho finangalo ke mau fai
Tauhi temipale, mo’ui’aki
Mohu kelesi ‘Atonai