CULTURALLY HEALTHY URBAN DESIGN AMONG PACIFIC ELDERS FOR GOOD HEALTH OUTCOMES:

A Brief Literature Review 2021

ACTIVATION

Everyday Experiences of community redesign and well-being

How community design can support older people to be physically active and socially connected

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National Science Challenges HEALTHIER LIVES

National Science Challenges AGEING WELL

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ABSTRACT

Healthy urban design is a concept that aims to promote healthy lifestyle behaviours including physical activity, social connectivity, and healthy eating through the development of safe streets, and access to green spaces and recreational parks, and convenient and affordable healthy foods. If utilised to their fullest extent these spaces can promote healthful lifestyles and quality of life, aiding in the prevention of chronic and musculoskeletal diseases such as obesity, arthritis, and even Alzheimer's disease. However, no research has yet been published examining the impact of urban spaces among the most vulnerable older adults, specifically Pacific elders (Matua) in urban Aotearoa New Zealand.

As holders of traditional knowledge and wisdom, Pacific elders or Matua are highly valued individuals within their respective families/aiga and wider nu'us/communities, and in turn their families are central to their health and wellbeing. Thus, the Fonofale framework was adopted to deepen understandings of behavioural, cultural, and societal factors that have either a direct or indirect influence upon the health status of Pacific elders.

Findings showed that urban environments including proximity to green spaces and safer street environments are associated with mobility, walking and social connectivity. Pacific culture also plays a significant role in how Pacific elders engage and interact within their urban spaces and may inhibit or enable their use of outdoor spaces. To date no research exists to show whether the urban built environment is a causative factor in relation to physical inactivity, mobility, and social connectivity among Pacific elders. Future research investigating health outcomes among Pacific elders should use a culturally appropriate framework to better inform policy development around building effective healthy urban designs that promote active urban use among Pacific elders.

The author reviewed 20 articles and reports on health outcomes among Pacific communities, and cultural and social related factors to health and wellbeing, with emphasis on physical activity and social connectedness.

Keywords

Pacific Elders, Pacific Health, Physical Activity, Culture, Social Connectedness, Safety, Built Environment

INTRODUCTION

Urban environments, Older Adults, Pacific elders

Over half of the world's population of 4.2 billion people (55%) live in cities and by the year 2050, 68% of the total global population will live in urban areas (Mechelli, 2019). In New Zealand, 86% (4.2 million) of the population live in urban areas (Statistics NZ, 2019), and an estimated 75% live in the main cities of Auckland, Wellington, and Christchurch. It is projected that by the year 2050, 90% of NZ's population will live in urban areas.

Urban design focuses on the physical form of a city: how the layout of buildings, roads, open spaces, and physical infrastructure can be best devised to maximise environmental sustainability, economic opportunity and social wellbeing. But over time, auto-dependent urban design has had a negative impact on the health of New Zealand communities (Future Streets Website, 2020). According to the Re-Thinking Urban Environments and Health report (Ministry of Health, [MoH] 2008), 70% of urban designers mentioned health and wellbeing as a low priority. This report led to the first healthy urban city policy in New Zealand, advocating for policies around healthy urban design that is sustainable, economically sound and promotes holistic healthy lifestyles.

The promotion of healthy urban city design aims to support and sustain healthy lifestyle behaviours, including walking and other forms of active travel and healthy food consumption, to prevent poor health outcomes, and in turn alleviate the economic burden of health care. Research since the 1960s has shown that car-centric city design is associated with poor health outcomes resulting from physical inactivity, traffic-related injuries, urban air pollutants contributing to respiratory problems (Field, 2010; Low & Corti, 2015), and more recently, in relation to mental health (Mechelli, 2019). Those most vulnerable are people in poor health and living in socially deprived situations, often Maori and Pacific communities. Of these, Pacific elders are of great concern.

Health Frameworks - Fonofale

Adults aged over 65 years are a growing population group currently comprising 15.2% of New Zealanders (an increase of almost 3% from 2013) and by 2038, they are projected to comprise 25.5% of the total New Zealand population (Statistics New Zealand, 2018). Although older people are living longer, aging makes them more vulnerable to disease and disability. Older adults have higher rates of chronic disease, and may have limited mobility, strength, and balance, which in turn make them more likely to be admitted to hospital, and for longer, and more prone to disability and injury mostly due to falls and slips (MoH, 2019; 2020a). Pacific elders are particularly at risk of ill health.

Throughout this review, Pacific older adults will also be referred to as Pacific elders to allow consistency with existing Pacific based literature and Pacific language and knowledge. Two frameworks were selected to understand the factors related to the health and wellbeing of Pacific elders: 1) The Fonofale framework, and 2) The social determinants of health model.

The Fonofale framework – a holistic health framework created by Fuimaono Pulotu-Endemann, in the form of a traditional Samoan 'fale' – is representative of the health and wellbeing of a Pacific person. The Fonofale framework includes factors such as culture or religion, which are key characteristics fundamental to Pacific peoples' wellbeing and not represented in European social determinants of health models. Yet such concepts are integral to the philosophical underpinnings of Pacific health and wellbeing. The Fonofale framework and the social determinants of health model were selected to identify and examine specific topics that directly or indirectly influence the health and wellbeing of Pacific peoples, including Pacific elders. These topics include lifestyle behaviours, nutrition and physical activity related behaviours, Pacific cultures, religion, public health information, the built environment, and social influences.

Purpose and Aim of Research

To date, no studies exist, to our knowledge, that use Pacific frameworks to examine the impact of urban environments in relation to social connectivity, mobility and physical activity as they pertain to the health and wellbeing of Pacific peoples in Aotearoa New Zealand. The aim of this review is to explore factors related to the health and wellbeing of Pacific older adults, with particular focus on urban environments and taking account of underlying social and cultural factors such as culture and religion. In doing so, this review identifies and examines NCD prevalence and health status among Pacific peoples, and explores Pacific health definitions and models, drawing upon international literature in relation to healthy lifestyles and urban environments, including street design, mobility, physical activity, and social connectivity.

Key research objectives are as follows:

1. Examine the context of Pacific health and wellbeing of Pacific peoples in Aotearoa, New Zealand

2. Gain in-depth understanding of the socio-cultural and behavioural factors related to health outcomes among Pacific elders

3. Examine associations between cultural, behavioural and environmental factors in relation to the urban built environment

Literature was identified from the following databases: PubMed, Google Scholar AUT, SCOPUS and EBSCOhost. Grey literature was sought using a generic online Google search for Pacific perspectives on Pacific elders and a further search was carried out for reports from government and health agency websites, namely the Ministry of Health New Zealand, Ministry of Pacific Peoples and the World Health Organisation. The searches were conducted from November 2020 to March 2021 and resulted in a total of 20 articles and reports, published from 2001 to 2021. The following search terms were used: Pacific elders, Older Adults, culture, health outcomes, urban environments, built environment, mobility, social connectivity, physical activity, and wellbeing.

PACIFIC PEOPLES IN AOTEAROA NEW ZEALAND

Demographics of Pacific peoples

For over a century Pacific peoples have contributed significantly to the political, social, and cultural fabric of New Zealand society (Pasefika Futures, 2015). Pacific peoples are a diverse population with their origins stemming from as many as 12 Pacific nations in the South Pacific region. They make up 8% of the total New Zealand population. Of the total Pacific population in New Zealand, Samoans comprise the largest group (49%), followed by Cook Island Māori (21%), Tongan (20%), Niuean (8%), Fijian (5%), Tokelauan (2%), Tuvaluan (1%) and Kiribati (0.7%) ethnic groups (Statistics New Zealand, 2018). Many identify with both ancestral Pacific homelands and contemporary New Zealand values and cultural practices (Anae, 2008; Pasefika Futures, 2015; Salesa, 2017). As such, the values and belief systems of Pacific ethnic groups are underpinned by cultural and religious contexts, with an estimated 90% of Pacific peoples affiliated with a religious belief. Since the 1990s, around 60% of Pacific peoples have been New Zealand born, with only few migrating from the Pacific Islands. Although most Pacific population groups share similarities, each ethnic specific Pacific nation has its own cultural beliefs, values, traditions, language, social structure, and history (Anae, 2008, Pasefika Futures, 2015).

Collectively, Pacific peoples are the fourth largest ethnic group in New Zealand, behind European, Māori and Asian ethnic groups (Statistics New Zealand, 2018), and they mostly reside in urban areas. Of the 380,000 Pacific peoples residing in New Zealand, almost 220,000 (60%) live in Auckland (MoH, 2020b). Geographically, nine in ten Pacific people (93.4%) live in the North Island and two-thirds (66.9%) live in the Auckland Region (Statistics New Zealand, 2019). The Pacific population is largely youthful, with 55% aged 25 years or younger, 37% in the 25–65-year age range, and 8% aged 65 years or over (MoH, 2020b).

The Pacific population was projected to reach 414,000 by 2021 (Statistics New Zealand, 2018), an increase of 152,000 or 58%, from 2001. By the year 2038, the number of Pacific older adults is expected to increase by 400%, compared to 270% increase for older Maori adults. Further, it is estimated that 10.9% of the total New Zealand population will be of Pacific ethnicity, making Pacific peoples the fastest growing ethnic group in New Zealand. Therefore, the contributions Pacific people make to New Zealand's society, economy and identity are and will continue to form an important part of the future of New Zealand (Pasefika Futures, 2015; Salesa, 2017).

Pacific health status in relation to poor health outcomes

Amid the significant societal and environmental contributions made by Pacific peoples in relation to the New Zealand context, counter-intuitively Pacific people are disproportionately represented in poor health outcomes compared to their non-Pacific counterparts. In New Zealand, Pacific peoples fare worse across all age groups in non-communicable disease (NCD) prevalence compared to non-Pacific ethnic groups, including obesity, the precursor to other lifestyle diseases including type 2 diabetes, stroke, heart disease, and cardiovascular disease (CVD), and various cancers (MoH, 2020a). Currently CVD is the leading cause of death, followed by diabetes and stroke (MoH, 2020a). An estimated 63.4% of Pacific adults aged 15 to 65 years are obese,

compared to 30.9% of the total New Zealand population, and 29.1% of Pacific children aged two to 14 years of age are obese compared to 9.4% of children in the total New Zealand population (MoH, 2020a).

Key risk factors include poor nutrition, smoking, lack of physical activity and stress-related conditions such as anxiety and depression. The health inequities concerning these risk factors among Pacific people are attributed to wider social determinants of health including culture, religion, the built environment, the food environment, climate change, globalisation, politics, gender equalities, socioeconomic status, migration, human rights, education and health and food literacy. This is important to understand as these factors are related to the development of NCDs such as type 2 diabetes and obesity. Figure 1 below depicts the social determinants of health for healthy aging.

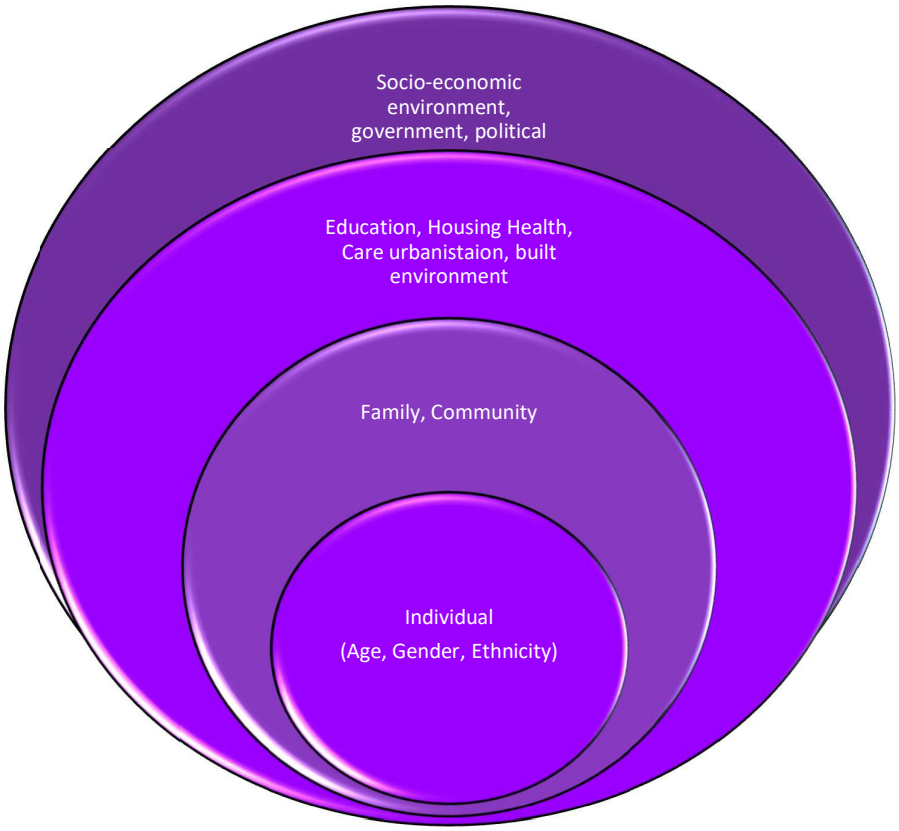

Fig 1. Social Determinants of Health for the aging population

Social determinants of health are social, economic, and environmental conditions (e.g., access to nutritious food, stable employment, safe housing) that are fundamental to the health and wellbeing of older adults (Figure 1). The social of determinants health framework was designed to recognise the wider factors associated with an individual's health status. To better understand the health and wellbeing of Pacific elders, both social and cultural factors must be addressed. Refer to Figure 2, the Fonofale Framework, for other factors related to health and wellbeing for Pacific peoples, such as traditional values, culture and religion.

New Zealand Pacific Health Policy

In Aotearoa New Zealand older adults are a high health priority, thus a range of government health related policies have been created to promote healthy lifestyles and address their healthcare needs. These include the New Zealand Health Strategy and New Zealand Disability Strategy, Health of Older People Strategy 2001, and more recently for Pacific peoples, the 'Ola Manuia health plan for 2020 to 2025. However, due in part to the capitalistic and biomedically driven government led system, current health and support services for older people lack a comprehensive policy and funding framework. For example, the New Zealand Ministry of Health 'Ola Manuia health plan provides recommendations and guidelines to promote healthy behaviours and eating patterns, including key support services, but does not mention the urban built environment as an important risk factor for poor health. Further, since the commencement of the first older adults' strategy in 1996, over time NCDs and poor health outcomes have worsened, and coupled with a growing population, further policy action and appropriate public health promotion and practice are warranted. Nonetheless, health policy is influenced by health research and it is our hope that the findings from this review and subsequent research could influence future health policy and practice for a healthy aging population.

PACIFIC HEALTH DEFINITIONS AND FRAMEWORKS

Pacific health definition and models

Pacific Health defined

Health, as defined by the World Health Organisation (2010), is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity. This definition has primarily been designed to embody the individual self/person and infers that an individual is to pursue and be responsible for their own health. In contrast, the concept of 'health' differs significantly for Pacific communities. The philosophical underpinnings of health and wellbeing for Pacific people is different to that for non-Pacific ethnic populations; they are deeply embedded in their respective cultures and the inter-relationships within and between their families and communities (i.e., church). Further supported and strongly recommended through the Medical Council of New Zealand (2010) is the belief that health issues and outcomes among Pacific peoples must be addressed through their respective Pacific ethnic worldviews, which include and are strongly influenced by – relationships with family and community, holistic health, reciprocity, responsibility, respect, faith, integrity, and dignity (MoH, 2008). As Reverend Setaita Veikune declares, 'Living life to the full is about physical as well as spiritual health – body, mind and spirit. We can't just concentrate on the spirit when the spirit lives within a body. We must care for the whole person' (as cited in MoH, 2007). In responding to Pacific health needs, he reiterates that the health of a Pacific person requires a holistic approach that recognises the interrelatedness of all aspects of a person's being through a Pacific lens. In a similar vein, Tamasese et al. (2014) supports this notion and goes on to say, 'The New Zealand mainstream cultural view of the self as individuated stands in contrast to the Pacific views of the self as a total being who exists in relationship to other people.' Further, perspectives among Pacific elders in Auckland, Pacific concepts of elders, eldership and the process of aging are underpinned by wholeness and sacredness from the place of belonging, family,

genealogy, language, culture and the environment. Many of these concepts are further explained below in the Fonofale Framework section.

Pacific Health Models

Based in Pacific epistemology and ontology, Pacific health models are designed to address the Pacific ways of being and doing that underpin the health and wellbeing of Pacific peoples. These understandings are generally underrepresented or given insignificant presence in European frameworks such as the social determinants of health model (see Figure 1, Dahlgren & Whitehead, 1991). As Sopoaga (2011) describes, Pacific Health models encompass the culture, values and health beliefs of Pacific peoples. Since 2011, numerous Pacific ethnic specific health models have been developed, designed to suit their respective cultures and better ascertain and meet Pacific population health needs. Such Pacific health models include Tongan 'Fonua', Fijian 'Vanua', and Samoa 'Fonofale' (Dr 'AnaTaufe'ulungaki, 2004; Tu'itahi, 2007). To date, due in part to the diversity of Pacific nations, no universal Pacific health model has been designed that suits all Pacific peoples; rather a few frameworks are available and practicing health professionals, students, and researchers are encouraged to select the most framework best suited to the context and needs of the respective Pacific-specific population.

Fonofale Framework

In the 1980s, the concept for the Fonofale Framework was created by Fuimaono Karl Pulotu-Endemann, a Samoan born, New Zealand-based academic and nursing professional. Since then, it has been developed and become established as a valid Pacific health framework for professional health practise and research. It was designed to help inform Pacific health paradigms and conceptualise how Pacific peoples live, recognising that Western research methodologies are unable to engage with traditional values, culture and religion as characteristics that define indigenous populations and also differentiate Pacific from non-Pacific ethnicities (Smith, 1999; Pulotu-Endemann, 2009). This review uses the Fonofale Framework, in which all the aspects depicted in the model are conceptualised as having an interactive relationship with each other (an imbalance of these characteristics correlates with an imbalance in the health status of the individual). Encompassed within the context of time and the environment (including the wider determinants of health), key concepts making up the fale include:

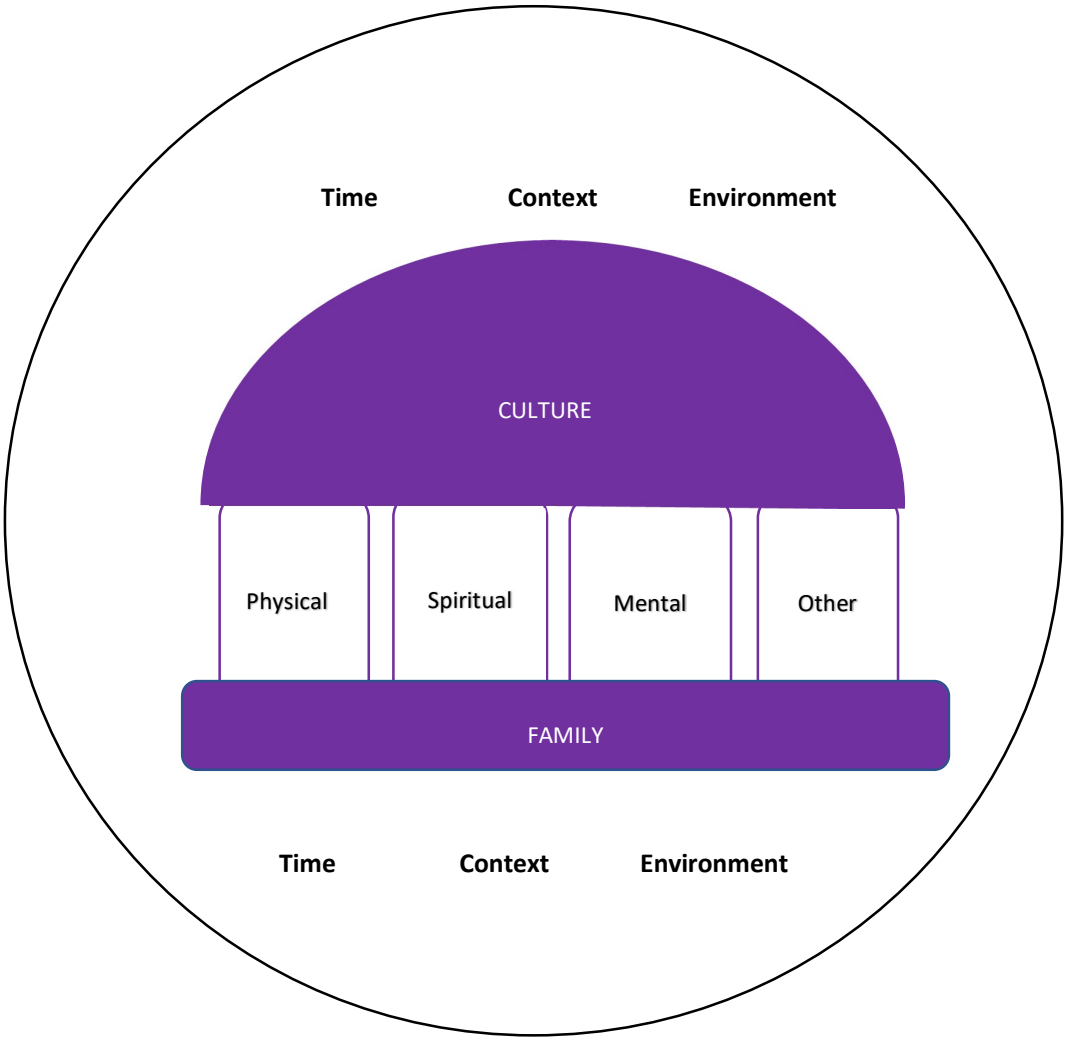

Figure 2. Fonofale Framework; adapted from Fuimaono Karl Pulotu-Endemann 2009

Culture = Roof: The roof represents cultural values and beliefs that comprise a form of shelter and protection of the family. Culture is underpinned by Pacific epidemiological and ontological ways of being and doing. It is dynamic and therefore constantly evolving and adapting. In New Zealand, culture includes the culture of New Zealand reared Pacific people as well as those Pacific people born and reared in their island homes. In some Pacific families, the culture of the family may comprise a traditional Pacific island cultural orientation, whereby its members live and practice their Pacific island cultural identity. Some families may lean towards a Palagi (European) orientation, whereby family members practice Palagi values and beliefs. Other families may live their lives somewhere on a continuum that stretches from a traditional Pacific cultural orientation to a Palagi cultural orientation, in which traditional beliefs and methods of healing are followed as well as Western methods.

Family = Foundation of fale: The foundation of the Fonofale represents the family, which is the foundation for all Pacific Island cultures. The family can be a nuclear family, as well as extended family or constituted family. Between the roof and the foundation are the four pou or posts, each representing a state of holistic wellbeing. These pou not only connect the culture and the family but are also continuous and interactive with each other.

The pou are:

Spiritual – this dimension relates to the sense of wellbeing which stems from a belief system that includes either Christian or traditional spirituality relating to nature, spirits, language, beliefs, and ancestors and history, or a combination of both.

Physical – this dimension relates to biological or physical wellbeing. It is the relationship of the body (which comprises anatomy and physiology) with physical or organic and inorganic substances such as food, water, air, and medications that can have either a positive or negative impact on physical wellbeing.

Mental – this dimension relates to the wellbeing or the health of the mind, which involves thinking and emotions as well as the behaviours expressed.

Other – this dimension relates to various variables that can directly or indirectly affect health, such as, but not limited to, gender, sexuality/sexual orientation, age, and socioeconomic status (Pulotu-Endemann, 2009).

Pacific elders – Who, Purpose

Older adults or the elderly are generally defined as those aged 65 years or older (MoH, 2002; WHO, 2020). In Pacific contexts, 'older adults' can be as young as 50 years of age, depending on their role within the family or community (Southwick et al., 2012). In Pacific contexts, older adults are generally referred to as Pacific elders, 'matua', 'elders' or 'elderly'. In the Samoan context, 'Olomatua' refers to a group of Samoan female elders and 'Lo'omatua' refers to a singular female elder, while 'Toeaina' refers to a male Samoan elder (Tamasese et al., 2014). Most Pacific elders in New Zealand are either from the first or second population group to migrate from the Pacific Islands and have kept their Pacific traditions as they disperse. To preserve their cultural traditions, language and knowledge, they have remained dedicated and devoted to nurturing their cultural customs. This is primarily through their faith in God and maintaining healthy positive connections with their families and communities to keep healthy and well. Refer to Figure 2, Fonofale Framework for holistic health.

Pacific elders – blessings, source of wisdom and protection

Essentially, Pacific elders are highly valued and of high importance within their respective families, churches, and communities, and hold invaluable roles as key advisors, holders of wisdom and traditional knowledge, protectors of family genealogy, and healers of social issues (Alp, 2019; Massey University, 2018; Treasuring Older Adults (TOA) Pacific, 2021). They embody a source of power and control within their families, bringing everyone together.

Chief Matai systems – Pacific elder role

In the Pacific Islands, most nations operate within a chiefly matai system, and especially in Samoan communities according to Fa'aSamoa, Samoan culture (Pacific Communities, 2020). This significant system is also practised among the Pacific diaspora (Anae, Tominiko, Falaniko, Fetui, Lima, 2017). A matai chief is a highly regarded individual, whose role involves significant responsibility within their respective family. 'Matai' is often given as an honorary title of respect, which comes with expectations to help with obligatory family rules and regulations. The role entails governing, protecting families, and safeguarding village or family rules along with obligations to either make or contribute to important decisions within the family and wider community/village. Traditionally, priority for these titles is given firstly to the eldest member of the family, and in some cases younger members (as young as 20 years of age). Further, due to the Pacific diaspora and the mixing of Pacific and Western culture and knowledge, some matai titles are gifted to family members living in the diaspora, including in New Zealand, Australia and the United States of America (Anae et al., 2017; Southwick et al., 2012).

The role of a chiefly matai can be challenging, and at times have detrimental effects on health status. For example, traditional cultural gatherings including weddings and funerals occur often, and the elders or matai of the family are obligated to support their families. This often involves sending money (at times large sums) to their families in the Pacific, and as a result has led to Pacific families seeking financial aid due to hardship. In some cases, the strain of continuing to undertake these cultural obligations can manifest in mental and physical health issues.

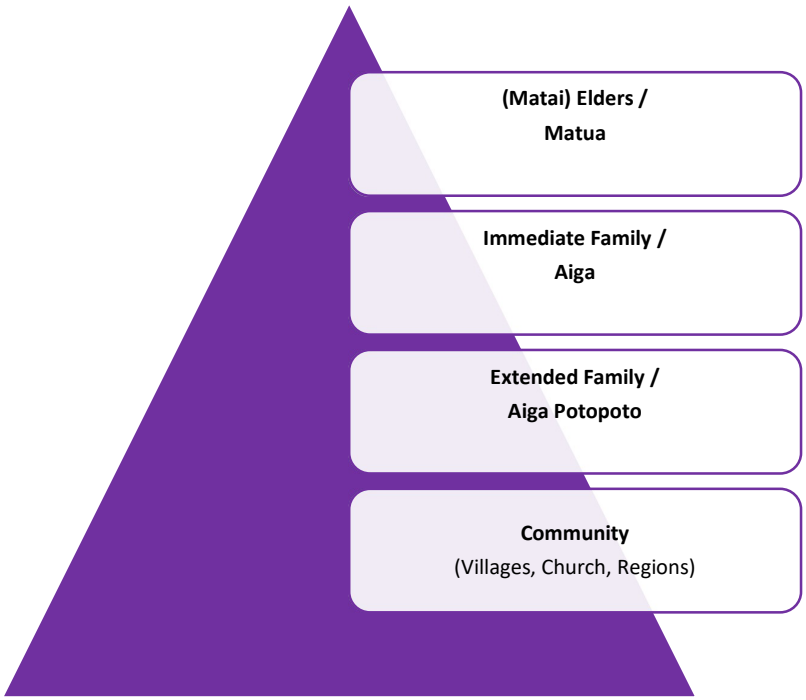

Figure. 3. Chiefly system for Pacific elders – adapted from personal family experience

Role in the family / aiga

As mentioned earlier in this review, Pacific elders are pillars of their families, or in Samoan 'aiga', and are treated as prized possessions to be cared for and nurtured (Sorensen et al., 2015; Tamasese et al., 1997; 2010). Most older Pacific people currently residing in New Zealand were born overseas. English is their second language, and they usually live with their immediate or extended families (MoH, 2012). Traditionally, family members, mainly their children and/or grandchildren, are assigned to take care of them and therefore it is uncommon for Pacific elders to be taken care of in a private aged care home or live on their own. It is customary in Pacific cultures that a member of the family is almost always present, taking care of the Pacific elder. In doing so, not only is the elder being taken care of, but the family as a whole will receive the blessings of a fruitful, healthful, successful life through giving time to help and care for their elders (Tamasese et al., 2014). Caring for Pacific matua – "signifies respect from the aiga caring for the elder so it encompasses the whole aiga".

Talanoa and etiquette with Pacific elders

As Pacific elders are treasured blessings who provide familial umbrella characteristics that fundamentally support and uphold their respective families and communities, conversing with Pacific elders requires proper etiquette. Talanoa with a Pacific elder when asked to speak, or when speaking, involves a lot of the time – and takes the form of small-short spurts of speech that are generally monotone, with a slow and gentle tone (Alp, 2019; Pacific communities, 2020). It is essential when talking to an elder, that if they are seated, you too are seated at eye level or lower. Listening is key when they are talking with no interruptions. If possible, it is important to wear similar Pacific attire, such as a wrap-around sarong, or 'ie lava lava' in the Samoan language, which covers the legs. To do otherwise is seen as disrespectful. These are highly valued Pacific customs that show a shared understanding of and respect for the culture, and thus a valuing of their customs (Pacific communities, 2020). It is also a way to gauge trust and invite insightful talanoa that can add depth to your conversation. Generally, the talanoa conveys a sense of purpose and meaning as the elders are holders and givers of wisdom and knowledge. The practice of such culturally safe etiquette is invaluable, especially in health settings, and promotes and strengthens trust to converse / talanoa with the elder and negates the effects of the negative attitudes and stereotypes faced by Pacific people that can transpire if done otherwise. However, these behaviours are being contested by the Pacific diaspora, also referred to as those leading a 'fa'apalagi' lifestyle (Salesa, 2014; Tamasese et al., 2014). Even so, Pacific elders will continue to play an integral leadership role in the aiga, regardless of how widely the family disperses, because of the genealogical traditions they possess that shelter and protect their families.

Role within their communities

Pacific elders, as central leaders within their respective families, have a significant part to play within their wider communities. These communities can include their local regional villages and neighbouring villages, their respective churches, and the communities in which they reside. As mentioned earlier in this review,

Pacific elders still hold strong cultural traditions, which means they not only fulfil their obligations in New Zealand, but also in the Pacific nations they migrated from, places most of them still refer to as 'home'.

In New Zealand, the Pacific church setting has replaced the village setting of the islands, and Pacific churches act as the social centres of many Pacific communities. As mentioned previously, Pacific churches in New Zealand fulfil a wider function beyond meeting the spiritual needs of Pacific people; they are also important as places where Pacific languages and elements of traditional culture are practised and maintained. Although the 2006 census showed that over 80% of Pacific people identified with Christian religions, this is not always linked to Pacific church attendance. Today, many younger Pacific people, often New Zealand-born, are exploring different social and spiritual identities outside of the Pacific churches. As a result, Pacific church attendance has been declining for these groups (Tiatia,1988), with some younger Pacific people attending non-Pacific speaking (palagi) churches, or not attending church at all (Salesa, 2017). Salesa (2017) supports the notion that the tradition of caring for the elderly is slowly eroding. One contributing factor is that Pacific youth are becoming less connected to their existential Pacific heritage because Pacific ways of being do not affect them directly, and consequently they see less need to abide by the rules and values of such traditions. Older adults can be left needing to adapt their attitudes and behaviours in the face of these generational changes, which can undermine the traditions, knowledge and beliefs instilled in them and passed from generation to generation. The implications for the health status of the elderly are immense. As their respective grandchildren or children are their main caregivers, changes in knowledge of and respect for traditions can lead to elders feeling disrespected, which can put strain and stress on their health and wellbeing (Hayes, 2009).

However, an intergenerational transition of empowerment is transforming Pacific cultures and customs. Social media for example has become a relatively new concept for Pacific peoples in terms of using and the sharing of information for health-related purposes. Pacific elders are known to use these platforms for communication but require the assistance of a member of the family or someone who is technologically knowledgeable to utilise their devices more effectively. Research to date has not explored how these devices are being utilised by Pacific elders, nor their impact upon health status in urban settings. This is important as health practitioners could encourage the use of these devices, for instance by promoting the use of an app designed specifically to enable Pacific elders to form a group and update each other on their outdoor recreational experiences, i.e., talanoa social media. More research is needed to further develop these concepts and better understand how they relate to Pacific elders' environment and wellbeing.

PACIFIC ELDERS, NUTRITION AND URBAN ENVIRONMENTS

Food, culture, and health status

Food is integral to Pacific culture. Pacific people in New Zealand continue to enjoy their traditional Pacific cuisine. The main staple foods consist of starchy foods including taro, green bananas, yams, kumara, chop suey, raw fish, coconut cream. Food plays an important role in Pacific culture, customs, and traditions. The sharing, giving, and gifting of food is often used to convey gratitude, express sincere condolences or even an apology, and for hospitality purposes. Thus, food plays a central role in the lives of Pacific peoples. An

understanding of this concept is important when discussing and creating expectations for dietary based lifestyle changes with Pacific peoples and in the planning of national food guidelines.

The food environment has an impact on the food choices people make, playing a significant role in the selection of foods purchased and consumed by respective communities. In South Auckland, an overabundance of food swamps has been evident since the 1980s, contributing to health inequities in more deprived areas.

Healthy urban design should consider increasing the number of healthy food outlets, even food havens or oases, that are easily accessible and inexpensive to encourage nutritious eating behaviours. To date, no research exists to understand the impact of nutrition related behaviours, namely selecting purchasing and consuming nutrient dense foods, or the availability and accessibility of healthy food stores in relation to Pacific elders.

PACIFIC ELDERS, MOBILITY, PHYSICAL ACTIVTY AND URBAN ENVIRONMENTS

An extensive body of research shows that physical activity is associated with a plethora of health-related benefits essential for healthy aging, including weight management, stronger bone and muscle health, and mental and spiritual health, and aids in the prevention of nutrient deficiency diseases and NCDs, including obesity and type 2 diabetes. Physical activity is defined as any bodily movement that requires skeletal muscle and uses energy stores above resting levels. Currently, the New Zealand Ministry of Health physical activity guidelines recommend engaging in physical activity every day, with at least 30 minutes of moderate to vigorous activity five times per week and vigorous activity at least once a week to achieve optimal health benefits essential for healthy aging (MoH, 2020a). Identifying appropriate activities for Pacific elders to enjoy and in turn increase activity and social connectivity requires insight into the traditional customs and culture that underpin their philosophical views on health. Further details around the types of activities aligned with Pacific culture and New Zealand policy and practice supporting Pacific elders in health and wellbeing are described below.

Activity patterns among Pacific elders

Leisure activities vs organised activities.

Pacific older adults are generally active in daily activities related to how their family systems operate, such as feau's, galuega, or household chores including cleaning inside and outside the house, specifically vacuuming, mopping and caring for fruit and vegetable gardens. Due primarily to the language barrier, the term physical activity is often translated into descriptive words around what activity means to them. Such words include 'moving', 'huffing and puffing' or 'breathlessness' from carrying out daily activities. This is important to understand as health promoters, health experts and health researchers should consider adopting new Pacific-related terms that best address physical activity in a culturally competent manner before promoting activity behaviours. It is hoped this will benefit these communities as current initiatives may be missing the key information needed to make credible and more sustainable changes within the urban New Zealand environment to support Pacific people's activity levels. Uncommon activities for Pacific elders to engage in include cycling, strenuous training or running marathons. Culturally, these types of activities are considered more suitable for

youth rather than Pacific elders. Even so, in the Pacific, Samoan health advocate Chris Te'o Samoan, cyclist and a co-founder of the USO (Understanding, Strengthening and Overcoming) Bike ride, has been recognised by the New Zealand government and awarded the New Zealand order of merit for services to health, cycling, and the Pacific community. He is currently undertaking a cycling intervention to promote the use of bike riding as an activity that promotes a healthy lifestyle. This could significantly influence the older generation to perhaps view bikes as a form of transport and activity, and in turn increase their physical activity. Likewise, TimetoThrive and cycling champion Teau Aiturau, alias Mr T, are generating interest and building cycling skills in people of all ages in South Auckland.

Figure 4. An early evening Timetothrive 'give-it-go' ebike ride in Mangere.

The common activities of Pacific older adults are different for men and women. Traditionally women are the home keepers where they carry out the duties of cooking, cleaning, gardening, and traditional leisure activities such as weaving flax and fine mats (larger mats for special occasions for example funerals, weddings and traditional gift giving). In contrast, men lead outdoor activities such as fishing from the South Pacific Ocean, and farming and harvesting fruits and vegetables on home owned farmland. These traditional lifestyles are still common, especially in the rural areas of the Pacific, although urban areas of the Pacific are gradually adapting to employed work opportunities. The Pacific diaspora has seen a gender shift in roles as more Pacific women are taking up employment opportunities. This significantly impacts their daily lifestyles as they are less likely to undertake the active cultural roles once carried out in the Pacific. This change has seen a significant impact on health outcomes as Pacific peoples are less likely to engage in regular physical activity compared to if they were still living in the Pacific.

In the Pacific Islands, particularly in the Samoan culture, as elders are generally cared for by their families, particularly their younger children, it is often frowned upon for elderly women or men to walk for leisure in the villages. However, the Pacific diaspora has seen a shift in attitudes and behaviours among Pacific elders, who increasingly engaging in activities that also include their wider communities. A qualitative study was conducted by Pacific researchers working with Pacific elders across the Auckland region to explore their health needs using the Fa'afaletiu methodology and talanoa methods. Findings from the talanoa with the Pacific elders strongly emphasised a real sense of urgency to use their urban spaces, but they felt uncomfortable and somewhat resistant to do so. For example, Mangere South Auckland has a newly built 'Fale Samoa', but it is

primarily used for formal purposes rather than recreational or community gatherings (Tamasese, Loudeen, & Waldegrave, 2014). However, the study's authors recommended setting up culturally specific villages for elders that would provide security and sense of belonging, a safe place for them to share knowledge, stories, speak their own language, enjoy familiar Pacific foods, and play suipi (a card game), dominoes or weave. The Fa'afaletui groups identified that growing old is a significant challenge, but that growing old with unrelated and unfamiliar people turns this challenge into a lonely and often desperate experience (Tamasese et al., 2014). This finding contests the cultural norm that Pacific elders are culturally bound to the home and suggests they are open to the idea of exploring their surrounding urban neighbourhoods to connect with others. More qualitative research with Pacific elders to explore ideas around using these spaces to encourage healthful behaviours including physical activity and eating patterns is needed.

Community health initiatives promoting healthy eating and physical activity among Pacific communities in Auckland, New Zealand

Lotu Moui, Healthy Villages Action Zones and Enua Ola

Aligned with the 2008 Healthy Eating Healthy Actions Pacific Health Strategy, a government funded strategy under the New Zealand Labour Government, community-based health promotion initiatives were formulated to promote healthy lifestyles in the fight against NCD prevalence across Pacific communities. These included Lotu Moui, Healthy Village Action Zones (HVAZ) and Enua Ola in South, Central and West Auckland / North Shore respectively (Ryan, Grey, & Mischewski, 2019). The aim of these initiatives was to promote healthy lifestyles through nutrition, physical activity, and smoking cessation among Pacific older adults. The concept was designed to capitalise on local churches and communities through empowering church leaders and their respective community members as health champions to encourage healthy activity and eating behaviours across the age spans (children to older adults) and Pacific ethnic groups. The Enua Ola programme, located on the North Shore, comprised ten community groups. Compulsory activity sessions included one physical activity session per week (Physical activities included Zumba, aerobics, Siva Samoa, walking within the venue/hall, stretching and sit-down chair exercises, always observed by the activity certified instructor) and one nutrition and a smoking cessation session per month. In 2011, the programme was evaluated using a mixed methods approach with data collected between February 2010 to October 2010 by the University of Auckland (Mahony & O'Connor, 2011). The purpose of the evaluation was used to gain an understanding of overall health and well-being related behaviours using and the impact of the programme. Findings from the healthy lifestyle survey showed that of the 261 participants (majority adults) surveyed, over 73% were engaging in healthy physical activity (i.e., 30 minutes of activity or more at least 5 days per week outside of the programme) and nutrition-related behaviours (i.e., 74% and 68% of adults consumed the recommended fruit and vegetable daily intakes respectively). Among other findings, 54% consumed takeaways, more than 60% consumed breakfast daily, 58% were watching less than two hours of TV per day. There was also a desire towards improving health behaviours: 38% wanted to change and lead a healthy lifestyle, 27% wanted to reduce their salt intake, 23% wanted to be more active, 11% wanted to improve their weight status, and 9% wanted to change their TV watching behaviour. Smoking and alcohol behaviours were relatively positive

among adults as 70% were non-drinkers, or drank within the recommended daily intake, and did not smoke cigarettes. Of these, 11% wanted to either reduce cigarette smoking or stop smoking. Perceived success of the programmes was also reviewed, with participants agreeing that increasing physical activity (among other factors including healthy weight range, environment and culture, and nutrition) and the motivation to maintain physical activity were key for good health. Attending the sessions increased physical activity awareness and promoted the opportunity to be active in their surroundings (e.g., thinking and feeling guilty for not attending classes, or being more active outside of the home, or when at the park with family questioning how to increase activity) and for role modelling. One of the participants mentioned that 'whatever we have learnt from our programmes, we are putting it into practice' (Mahony & O'Connor, 2011). Areas that hindered their success and effectiveness, rated from most important to least important, were programme funding, cultural norms, attitudes and motivations, the professionalism of instructors, and lack of awareness. Overall, the programme was a highly regarded part of the Pacific community and participants highly recommended that the programme be continued to meet the health needs of the community. Due to the change in Ministry of Health funding priorities in 2009, public health funding was re-directed to maternal and new-born nutrition, and thus public health funding for the activity programme ceased. As a result, the Lotu Moui programme was discontinued from 2009, but both Enua Ola and HVAZ have remained active and are supported by primary health care organisations, 'The Fono' and Alliance Health Trust (respectively) in Auckland, New Zealand.

Pacific walking groups, dance community groups, gardening groups weaving, sewing, vs Western individualistic activities: gym, walking, running

A number of local initiatives have been set up to support Pacific people to increase activity and social connectivity within urban communities. However, a search for key findings from these community strength-based health initiatives revealed nothing, suggesting no formal evaluations have been undertaken. These community initiatives rely heavily upon primary health care or district health board funding, and otherwise are self-sustained by their respective church or via community funding. Overall, these activities have continued because Pacific elders and their families care about their health, but more action is needed to better inform these strategies to encourage Pacific elders to use environments closer to home on their own.

Mobility, walkability, physical activity, and urban environments

There is strong evidence linking attributes of urban street design, as well as access to local parks, trails, walkways and open green spaces, to physical activity behaviour, including active travel. Living in a walkable neighbourhood with a higher prevalence of design features such as well-connected streets, higher dwelling density, and easy access to common destinations like shops, schools, parks and public transport is associated with higher levels of physical activity than living in neighbourhoods without these features. Similar relationships, based on a range of self-reported and objective measures, have been observed repeatedly in cross sectional studies in different cities and in various countries (McCormack & Shiell, 2011; Sallis et al., 2016) including New Zealand (Badland and Schofield, 2005; Wiles, Rolleston, Pillai, Broad, The, Gott, & Kerse, 2017, Witten et al., 2012). Findings have also been consistent in studies involving older people, including

Asian (Carl, 2003; Rachelle, Sugiyama, Davies, Loh, Turrell, Carver, & Cerin, 2019; Xiong, Hu, & Lu, 2020), European (Au Van Hoof, Kazak, Perek-Bialas, & Peek, 2018; Ewing, Fenton, & Pojednic, 2019; Richardson et al, 2013; Cinderby, Cambridge, Attuyer, Bevan, Croucher, Gilroy, & Swallow 2018) and Israeli (Moran, Werner, Doron, Hagani, Benvenisti, King, Winter, Sheats, Garber, Motro, & Ergon, 2017) older adults. After completing a 14 city, ten-country study using objective measures of the built environment and physical activity, Sallis et al. (2016) concluded that the findings had such consistency that there is merit in 'engaging urban planning, transportation and parks sectors in efforts to reduce the health burden' of insufficient physical activity. While the evidence indicates that older adults living in more walkable neighbourhoods, and close to parks and accessible walking trails are more likely to use these spaces and be physically active, there is a dearth of evidence to guide urban investments that will maximize physical activity patterns among Pacific populations, especially Pacific elders, to promote health and reduce NCD prevalence and mortality.

PACIFIC ELDERS SOCIAL CONNECTIVITY AND URBAN ENVIRONMENTS

As mentioned earlier in this review, due to aging, older adults are more at risk of slips and falls, injury, disability, mental health related conditions, and also dementia. Utilising their outdoor environments could help lessen the extent of these conditions and foster longevity and good health and wellbeing. Findings from the Te Kaveinga – Mental health and wellbeing of Pacific peoples' survey – indicate that Pacific older adults compared to non-Pacific counterparts are less likely to experience mental health related issues, or associated conditions such as loneliness because their lifestyles operate on relationships with their families (Ataera-Minster, & Trowland, 2018). However, older adults are willing to increase various types of physical activities as well as overall physical activity (Clinton et al, 2011). Although there is strong evidence that the built environment can support physical activity and enhance health and wellbeing and quality of life while aging, the benefits of the outdoors as a place to be active may be underestimated among Pacific elders.

Humans are social beings and social connections are an essential psychological nutrient. Spending time with friends and family, taking part in group activities, and having a sense of community have been shown to be a significant predictor of health (Harani et al., 2021). The health-related benefits affect physical and mental health via increased feelings of happiness and sense of belonging, which in turn lower the risk of feelings of loneliness, depression, anxiety, disease (i.e., dementia, cardiovascular health) and mortality. One study has suggested social connection can be an even greater determinant of health than obesity, smoking, and high blood pressure (Holt-Lunstad, Robles, & Sbarra, 2017).

Although Pacific elders are less likely to experience feelings of loneliness compared to their non-Pacific counterparts (Ataera-Minster, & Trowland, 2018; Tamasese et al., 2014), as they age, they may still be vulnerable to feeling isolated, which can precipitate stress related conditions and increased cardiovascular problems. In a technological era, with online platforms such as Facebook and Instagram, it is extremely important that we make a conscious effort to create and maintain strong ties and a strong sense of community to preserve the health and wellbeing of elders. As illustrated in Figure 2, the Fonofale Framework, the interrelationships established between family, faith in God, and culture are central to Pacific health wellbeing.

South Auckland has been at the epicentre of the COVID 19 pandemic in Aotearoa, and Pacific populations especially Pacific elders are therefore a high-risk group. Social distancing is necessary (at times enforced) to prevent the spread of disease, which increases the risk of older adults experiencing feelings of loneliness and disconnection from their communities and environments. Recognising the potential risk for Pacific Matua and to create a sense of community and revive the livelihoods of Pacific Matua after two lock downs, Vaka Matua and Pacific Homecare collaborated and established a Matua Ola Manuia Market Day, a subset of the Auckland-wide project The Matua: Ola Manuia Programme, which focuses on increasing Pacific older people's health and wellbeing through social connectedness, social inclusion, and social enterprise. The day's events involved a collective of Pacific Matua in the Wellington region showcasing and sharing their Pacific based handiworks, such as necklace making, flax-bag weaving through song and dance. Another next event is scheduled for 2021.

Re-indigenising urban environments for improved connectivity

Studies in New Zealand suggest that by re-indigenising the built environment using a culturally competent approach, older adults may utilise their urban spaces to connect with their whanau and communities and strengthen their sense of belonging to their whenua/land (Raerino et al, 2020; Wiles, Rolleston, Pillai, Broad, Teh, Gott, & Kerse, 2017). In consultation with community members and leaders in treasured and respected Maori settings, Raerino et al. (2020) have suggested that future strategies around urban design should re-indigenise spaces to enhance cultural identity, including through reclamation of land, to allow indigenous peoples to feel a sense of belonging and engagement, and to strengthen hauora wellbeing. Developing capacity amongst indigenous communities, which is integral to effective engagement and the realisation of autonomy in urban design projects, has broader implications for indigenous sovereignty, spatial justice, and health equity. In a similar vein, Pleasant et al. (2013) argue that to effectively research the effects of an open space on human health and well-being, a holistic and integrative design approach using a cross- disciplinary team is required. Designers working among culturally diverse communities should consider this concept to promote outdoor use and increase walkability. Similar trends and patterns could apply to Pacific elders and be used to effectively improve health outcomes among Pacific populations.

RECOMMENDATIONS LIMITATIONS AND THE WAY FORWARD

Recommendations

Findings from this review show that among older adults, mobility and social connectivity is better for those living in walkable urban environments within proximity of safe streets, and open green spaces and local recreational parks. Based on findings from the Enua Ola evaluation project, Pacific elders are active members of their communities who want to be proactive within their respective communities. Based on these findings, key recommendations from this review are as follows:

Top-down collective approach

- Greater investment in healthy urban design is needed across the Auckland region, especially in areas where NCD disease rates are high, namely in the most deprived areas and in Pacific and Maori communities

- There is no mention of the built environment or urban design in the Ministry of Health's Ola Manuia Strategy as a key priority or pathway for better health outcomes across the Pacific population. Informing policymakers about this notion is imperative to support appropriate health guidelines and regulations for Pacific peoples, including Pacific elders.
- Urban design is an underestimated area of research, which deserves attention in health policy agendas and planning.

Collective community level approach

A more collective approach to understanding the health and wellbeing implications of urban environments is needed. With respect to Pacific wellbeing, policy makers, urban design architects and researchers in this field need to collaborate with highly valued and respected members of the Pacific community, namely Faifeaus, pastors, ministers, and elders who can best represent Pacific elders.

Recommendations are:

- Co-designing healthy urban design underpinned by Pacific philosophical frameworks that are culturally, morally, and ethically appropriate where Pacific communities reside.
- NGOs and community leaders need to work closely together to inform Pacific communities about the impact of the environment in relation to their health.
- Understanding the stories of the Pacific may help shape healthier food and built environments through healthy urban design for the Pacific community.
- Family / Aiga is central to the wellbeing of Pacific elders throughout the aging process, so using an intergenerational health approach to promoting activity among Pacific elders active is imperative.

Limitations

Limited reports and qualitative studies on Pacific elders

No research, epidemiological or qualitative, exists on relationships between the urban built environment and healthy urban design and behavioural activity patterns among Pacific peoples, especially Pacific elders, so this report has relied heavily upon national and international literature from contexts that under-represent Pacific peoples.

Within the New Zealand context, health outcomes in relation to urban environments is an under-researched topic for Pacific peoples, thus this review has relied on grey literature. Nonetheless, the review has drawn on rich insights from the elderly Pacific population and the perspectives of those who have either direct or indirect interactions or experiences with Pacific elders.

Study designs

The study designs measuring urban environments in relation to mobility and physical activity have used generic Western designs and the quantitative results underreport the perspectives of people and their

behavioural patterns within the premise of active urban environments. The findings of Te Ara Mua – Future Streets, in which Pacific peoples make up over 60% of the sample, will help to address this knowledge gap.

Pacific specific cultural needs vs urban Western lifestyle

There is a mismatch between balancing a healthy lifestyle as a Pacific person, especially elder, within the Pacific diaspora in Aotearoa compared to maintaining a healthful lifestyle in the Pacific. It is critical to approach Pacific populations, especially Pacific elders, from a standpoint of Pacific cultural competence as most Pacific elders are first generation migrants and their cultural ties are strong.

CONCLUSION

Pacific elders are an integral part of their respective families and the Aotearoa, New Zealand fabric. However, cultural and social risk factors can undermine the capacity of Pacific elders, our Matua, to lead healthful lifestyles. Nonetheless, in light of this review, promoting the use of outdoor environments, more specifically healthy urban spaces, could be one way of prolonging life expectancy and quality of life.

Designing and retrofitting urban spaces to provide easy access to open green spaces, recreational parks, and safer streets could help promote active lifestyles and prevent lifestyle disease among Pacific elders, although to date, no research has been published on the impact of urban street design in relation to holistic wellbeing among Pacific elders.

However, encouraging healthful behaviours goes beyond the individual for Pacific peoples, as their philosophical ways of being is founded on a collective front, their families and their communities. Thus, using culturally appropriate study design and methods that represent and reflect Pacific communities in urban design planning and implementation is imperative to better understanding the health needs of Pacific elders. Future research using qualitative cultural designs with Pacific elders and a culturally appropriate approach such as the Fonofale Framework alongside Pacific methods such as talanoa and talanga (Tongan-specific context) is essential.

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