




Worldviews of hearing health for Pacific peoples in Aotearoa New Zealand: a mixed methods study

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ABSTRACT

Introduction. Pacific peoples experience inequity in accessing hearing health care and are disproportionately exposed to the underlying determinants impacting ear and hearing health in Aotearoa New Zealand. Understanding community members' worldviews, including perspectives, beliefs and values, is essential in developing appropriate and responsive hearing healthcare services to meet the needs of Pacific peoples. **Aim.** The purpose of this paper is to understand the worldviews, knowledge and beliefs held by Pacific peoples regarding hearing health in Aotearoa New Zealand. **Methods.** A mixed-methods approach was used. Twelve semi-structured face-to-face interviews were conducted with Pacific community members. Twenty-five participants completed an online questionnaire. A simultaneous, integrated mixed-methods approach was used to analyse the qualitative and quantitative data. **Results.** Five main themes were established, which were: The Meaning of Hearing; Causes of hearing loss; Consequences of hearing loss and Disability; and Improving health care for ear disease and hearing loss. **Discussion.** Pacific peoples value hearing health to communicate and connect with their families and communities. Participants highlighted the importance of hearing health across the life course. Although the study findings revealed there is potentially less stigma and shame around hearing loss in New Zealand, denial and fatalistic attitudes towards hearing loss may delay some people from seeking healthcare services. Participants expressed key ways in which the health system can be more responsive to the hearing health needs of Pacific peoples in Aotearoa New Zealand.

Keywords: delivery of healthcare, disability, ear health, hearing loss, knowledge, New Zealand, pacific peoples, worldviews.

Introduction

Pacific peoples in Aotearoa New Zealand (NZ) experience difficulties accessing health care and shortcomings in quality of care.^{1–3} The compounding effects of differential access to healthcare services, socioeconomic disadvantage, and structural racism contribute to poorer health outcomes for Pacific peoples compared to other ethnicities.⁴ Negative experiences with providers in the past can impact access to care in the future, exacerbated by a failure to acknowledge Pacific values, poor awareness of both challenges and strengths in Pacific communities, inadequate cultural safety practices and mismatched expectations between healthcare providers, and patients and their families.^{3,4}

Hearing is important for language acquisition, cognitive and emotional development, and learning.⁵ In NZ, middle ear disease, acquired hearing loss, and auditory processing is prevalent among Pacific children.^{6–8} Delayed grommet surgery and high rates of ambulatory sensitive hospitalisations for middle ear disease in Pacific children indicate structural barriers to hearing health service delivery,⁹ reflecting deep causal mechanisms that contribute to the unjust distribution of resources and power based on ethnicity.¹⁰

Understanding community members' worldviews, perspectives, and beliefs in ear and hearing health is essential in identifying gaps and establishing appropriate healthcare services, as individuals and groups can have vastly different experiences and notions of

WHAT GAP THIS FILLS

What is already known: Limited international research with Pacific Island communities has examined ear disease and hearing health knowledge and beliefs to inform health service delivery.

What this study adds: This study is the first mixed-methods investigation using a Pacific methodological approach to examine Pacific peoples' ear and hearing health worldviews, including knowledge, beliefs, and experiences of the hearing healthcare system in Aotearoa New Zealand. It will assist healthcare professionals in providing more responsive ear and hearing care services for Pacific peoples.

health and disease. Three studies have been conducted on perspectives of ear and hearing health knowledge and beliefs in Pacific Island countries and all showed strong support for community-based hearing health services, with community members having strong knowledge of ear and hearing health.^{11–13} Only one study on older Pacific peoples' perspectives revealed financial, structural and cognitive barriers to accessing hearing health services in NZ.¹⁴ No studies to date have examined the hearing health worldviews of Pacific peoples, in particular young peoples, and facilitating factors to hearing health services access in NZ.

This research aimed to understand Pacific peoples' ear and hearing health worldviews, particularly around knowledge, beliefs and attitudes. The research also aimed to explore the patterns of Pacific peoples' access to and use of mainstream and traditional health care, and to provide recommendations for primary health care and hearing health services delivery.

Methods

The study utilised simultaneous, integrated mixed methods. The online questionnaire was a modified version of the questionnaire used within a previous Pasifika worldviews study by EH,^{1,2} which was amended by the research team to ensure relevance to the current research objectives and context. The interview questions were semi-structured and open-ended in nature, to allow for the flexible exploration of the main themes. The interview schedules and questionnaire can be found in Supplementary materials table S1 and file S1.

All research team members developed, reviewed and revised the interview schedule and questionnaire. The questionnaire was uploaded onto RedCap (Vanderbilt University), a secure web application for building and managing online surveys and databases and disseminated across networks.

Pacific values formed the theoretical basis for the study, adhering to Pacific research principles to strengthen the validity of the findings, and ensure benefit for Pacific

communities.¹⁵ The Pacific concept of *Talanoa*, an oratory tradition recognised in many Pacific Island countries¹⁶ guided the interviews. *Talanoa* is commonly used within Pacific academic research as a method and methodology to enable connected, respectful, open conversation and allow interaction to achieve research goals.¹⁷

Ethics

Ethical approval was granted on the 12 May 2022 for 3 years by the Auckland Health Research Ethics Committee (AHREC) (reference AH23711).

Participants

Purposive sampling¹⁸ and snowball sampling methods¹⁹ were used to recruit interview and questionnaire participants. A study advertisement inviting participation in an interview, or to complete an online questionnaire, was circulated across community and research networks. All interested parties were offered an interview, so long as they met the inclusion criteria of affiliating with at least one Pacific ethnicity and be aged >16 years. The study aimed to have most participants aged <35 years due to the youthful Pacific demographic in NZ.²⁰

Twelve face-to-face interviews were conducted between May 2022 and September 2022. The questions were open-ended to allow a flexible interviewing style. Interviews were audio-recorded, transcribed verbatim, and cross-checked by participants if requested. Field notes were taken by the interviewers. Recruitment and data analysis of questionnaires and interviews were run concurrently, and codes and themes were developed as responses arrived. It was agreed among the research team that 10–12 interviews and up to 30 completed questionnaires were an appropriate number for this study due to data sufficiency and no new themes being raised.

Data analysis

Interview and questionnaire data were analysed by EH using inductive reflexive thematic analysis methods described by Braun and Clarke.²¹ To guide the thematic analysis process and to extract the key themes and sub-themes from within and across the interview and questionnaire data sets, a holistic pan-Pacific framework, the Fonofale Model,²² was used as a reference to guide theme formation. Codes were systematically generated across the combined interview and questionnaire datasets, with 29 initial codes generated during this phase. Five initial candidate themes were then developed based on these initial codes. Triangulation²³ was employed when the research team reviewed, amended and ultimately agreed upon themes and codes, resulting in the final five main themes and associated sub-themes. Themes were checked against the entire dataset to ensure accuracy and re-worked and revised as required. The data

software packages, NVivo (Lumivero) and Statistical Package for the Social Sciences (IBM) version 28.0 for quantitative data analysis within the questionnaire data, were used to assist with descriptive data analysis of the closed-ended quantitative questions. Sample size analysis tests for the quantitative data portion of the study were not relevant due to the exploratory nature of the study. Tests of significance were performed, as appropriate, to assess any relationship between variables. The three domains within the Consolidated Criteria for Reporting Qualitative Studies (COREQ) checklist²⁴ were used to present the qualitative data.

Results

Semi-structured interviews

The 12 interview participants included nine female and three male participants, with half of the participants self-identifying as Samoan and the other half as Tongan. The majority of participants were New Zealand-born (*n* = 8), with the remaining Pacific-born. The average age of the Pacific-born participants was older than that of New Zealand-born participants, at age 60 years versus age 36 years for the New Zealand-born group. Five of the New Zealand-born participants were aged <25 years. There were no interview participants between the ages of 26–39 years.

Online questionnaires

Twenty-five participants completed the online survey. The participants identified as Samoan (*n* = 14), Tokelauan

(*n* = 9), Tongan (*n* = 6) and Fijian (*n* = 1). Most of the participants were Samoan (*n* = 14), female (*n* = 17) and aged <40 years (*n* = 18), with 13 participants in the 26- to 29-years age group followed by five participants in the 16- to 25-years age group. Most participants were New Zealand-born (*n* = 17), with the remainder being Pacific Island-born. The 26- to 39-years age questionnaire group had the greatest number of New Zealand-born participants (*n* = 12) and the least Pacific-born participants (*n* = 1). Tests of significance were performed, and no significant differences in response proportions were measured for any item between the place of birth, gender and age group and quantitative variables.

Summary of themes

Table 1 below presents the main themes and associated sub-themes.

Theme one: the meaning of hearing

The sense of hearing expressed by participants as *Fa’alogo* (Samoan), *Fanongo* (Tongan), *Whakarongo* (Māori), and *Fakalogo* (Tokelauan) was considered to be an important aspect of the human experience and that hearing was a ‘gift’, a ‘privilege’ and a ‘vital sense of humanity’.

Hearing was a vital part of the human sensory system in its biomedical functions of receiving sound and converting it to electrical signals.

It (hearing) allows me to receive information which enables me to think and process the information and then determine a response.... It helps me to gauge the

Table 1. Main themes and sub-themes regarding hearing health in Aotearoa New Zealand.

Knowledge, beliefs, understanding	<p>Meaning of hearing</p> <ul style="list-style-type: none">• Listening: communication, understanding, learning, connection• Identity• Community• Biomedical• Safety <p>Causes of hearing loss</p> <ul style="list-style-type: none">• Biomedical, behavioural, environmental, social• Generational differences• Acculturation• Protecting hearing <p>Consequences of hearing loss</p> <ul style="list-style-type: none">• Development: speech and language, learning, concern• Deterioration• Behaviour: frustration, ignoring, misbehaving, isolation, adapting• Misperceptions: denial, fate, misbeliefs <p>Disability</p> <ul style="list-style-type: none">• Care: empathy, normalisation• Stigma: low expectations, shame, mocking or teasing	Experiences of health and health care	<p>Improving health care for ear disease and hearing loss</p> <ul style="list-style-type: none">• Strong system: primary care, childhood services, audiology and hearing aid access, visibility of services, community engagement• Strong relationships: Patient–healthcare worker relationship, Pacific healthcare provider, being proactive, language, health education• Barriers to positive healthcare experiences: physical, transport, cost, convenience, knowledge of services, referral pathway• Treatment strategies of ear problems or hearing loss
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emotions of a person or group I'm communicating with or attending to. It brings me peace and helps me regulate my own emotions – for example, when I hear the waves or birdsong. (Questionnaire participant [QP] 3)

Connection to their worlds was a consistent theme in interviews and questionnaire responses. Hearing facilitated regulation of emotions, communication, and enhanced connection to families and community networks.

Hearing is very essential to me as I use it for all my daily living (talking, listening, laughing etc.). It helps me to connect, engage, have relationships with peoples, communities etc. Without it would change my world...perhaps become depressed and lonely. (QP 2)

Listening facilitated the transfer of oral histories and connection to ancestral folklore, nature and music, which connects with identity.

It (hearing) allows me to recognise things that identify me: my family members' voices, hymns or village songs... It helps me recall and recite my genealogy and/or significant landmarks (QP 3)

Theme two: causes of hearing loss

Participants identified a wide range of causes of hearing loss across the life course, including biomedical, behavioural, environmental and social factors (Table 2).

Some participants recognised that knowledge about causes of hearing loss would vary between generations, place of birth, and cultural norms. Some participants believed the older generation would connect hearing loss to a spiritual curse. Further, participants who had lived both in the Pacific Islands and New Zealand discussed the contrast in attitudes towards health, including hearing health, highlighting a process of acculturation.

Growing up in Tonga you hear a lot about people being cursed and being possessed. Then you come here (New

Zealand), and you have so much access to resources... Especially when you're younger you just believe what you're told, but then by the time I'd moved here, you develop an interpretation... there are medical and scientific reasons as to why things happen, not just all spiritual causes. (Interview participant ([IP] 4)

Discussions of causes of hearing loss led participants to talk about protecting hearing. Self-care, healthy hygiene practices and hearing protection practices were discussed, and spiritual or traditional approaches were only used by very few. For questionnaire participants, the three main sources of information on hearing health would be via the internet (*n* = 14), a healthcare worker (*n* = 12) or a family member (*n* = 10).

Theme three: consequences of hearing loss

Participants expressed that untreated hearing loss could have a negative effect on development, education and learning, such as speech and language. Eighty-eight percent (*n* = 22) of questionnaire participants recognised long-term consequences if a hearing loss went untreated.

It's very important for me because e ke imagine se kamaiki ae faipe (you can imagine a kid if they're deaf), or something is wrong with the ear... that would delay the language as well. (IP 12)

Participants observed how hearing loss could cause personal hardship, such as being labelled as 'dumb' or 'stupid'. Questionnaire participant 16 perceived a 'negative perception in the community about hearing loss' and recognised the importance of 'coming to terms with it, dealing with it, and living with it'.

Ninety-two percent (*n* = 23) of questionnaire participants would be worried, or very worried, if they or a family member had a hearing loss, due to its impact on a range of human experiences, normalisation and participation in family activities.

Table 2. Causes of hearing loss identified across the life course.

Biomedical	Behavioural	Environmental	Social
Genetic or Congenital	Poor hygiene	Loud noise	Lack of education on hearing health
Ageing	Diving and having pressure on ears	Medication side effects	Lack of support for accessible ear care services for Pacific people
Infectious diseases eg measles, mumps	Swimming and getting water in ears; Swimming in dirty water	New Zealand climate	Poor visibility of hearing health services
Middle ear disease particularly in childhood	Pushing objects such as ear buds too far into ears		Attitudes such as denial, fatalism, stigma
Ear wax	Not accessing care for ear issues		
Trauma	Not protecting ears such as wearing ear muffs		

Although some participants accepted there might be no negative impacts with hearing loss if managed well, more expressed hearing loss having a range of behavioural impacts which could be misperceived as that person being naughty, lazy, teasing, perceived as ignoring, or commonly, that the person has 'selective hearing'. Further sub-themes of denial and disbelief of children having a hearing problem were raised due to shame, blame, or intergenerational behavioural norms.

I (the teacher) called his parents and his Dad refused (to get his sons ears checked), but I referred directly to the GP. And sure enough, two big blocks of wax were sitting in his ears. And I told the parents 'I have a feeling this boy's ears aren't good, his language is delayed'. And she just said 'no that's just him, as he gets older he'll learn how to talk' and I said no. (IP 12)

Consequently, participants thought some Pacific peoples held fatalistic beliefs regarding child development and that their child's health was in the hands of the Gods or a higher spiritual power.

Theme four: disability

A strengths-based perspective of disability was raised, with participants emphasising the importance of non-judgmental and empathetic care for children with disabilities.

People need to be aware that we're living in say different era, there are people in different situations, and they shouldn't be embarrassed about that. And when people see others whether it's a special needs person, it encourages others who might have a special needs person in their family, to say, it's normal, this is part of life. And it encourages families to then seek help. (IP 3)

Both questionnaire and interview participants thought children with disabilities could face more stigma in Pacific Island countries because they are more visible in NZ, compared to being more hidden in the Pacific Islands. As a result, a child with a hearing disability may be shamed, and experience mocking and teasing, and their parents may have low expectations of their abilities.

Theme five: improving health care for ear disease and hearing loss

Most participants expressed that they would access primary healthcare services if they or their family members had a hearing or ear issue, including all of the questionnaire participants. Seventeen questionnaire participants expressed that they would seek treatment from primary care over other places such as a community nurse, family members, and a pharmacy. Participants also communicated the utility of school-based nursing to identify and manage child ear health problems.

Now we have a nurse at the school...Our parents were less stressed because they knew that the nurse was there, and then if they needed to see the doctor, they would be referred accordingly. (IP 1)

Most participants across interviews and questionnaires expressed the importance of interpersonal connection between healthcare workers, including receptionists, and their patients. Many discussed the importance of empathy and warmth in a healthcare interaction.

The lady at the reception ... She was very compassionate, and Dad liked that. She was genuine to him, and that built the rapport and then he was happy. Because up until that point, he was like, 'Why do we have to come? What's going to happen?' Then the Audiologist that came, Dad liked her because she came and shook his hand. She rubbed his hand and said, your hands are nice and warm Papa! Follow me! So it is so important, as Pacific people, communication, and to have that human touch. (IP 2)

Participants expressed that compassionate health care built strong, mutually respectful relationships.

The relationship between my parents and our family doctor was so strong because I felt that the GP became the Tongan, even though he was European. Mum was so comfortable with our family doctor, it was so easy for her to express herself... because she knew he would hear her and what her experiences were. (IP 2)

Other participants discussed the importance of the healthcare worker being meticulous, thorough, and not being rushed through the appointment. Clear, non-jargonistic language was seen to be important to build trust. The use of Pacific languages where possible was important to enhance the safety of the clinical interaction.

With a lot of Pacific people, there's a lack of trust, they don't have the sense of confidentiality with non-Pacific healthcare providers... if my English isn't great and I can't communicate, how do I know that you know what I need? It's that sense of comfort and confidence, familiarity. (IP 4)

If parents were in denial, or experienced intergenerational normalisation of hearing loss, parents and teachers can play a proactive role in educating other parents and the wider whānau about the importance of hearing health.

Because I understand the importance o le fai o kaliga o kamaiki (of checking children's ears), that's why I encourage other people to do it. (IP 12)

Although prompt healthcare service seeking was considered essential by questionnaire participants, the three key barriers to accessing hearing health services were: time ($n = 11$), cost ($n = 10$) and work commitments ($n = 6$). Other physical barriers discussed were the availability of after-hours appointments and poor transportation linkages.

Some interview participants said hearing health services should be more visible in the community. This was highlighted within the questionnaire findings, where all participants stated they would seek treatment for an ear or hearing problem, but only eight participants knew where to go, and only seven were satisfied or very satisfied with the current level of ear and hearing care services in their local area.

I believe Hearing Health services are less visible than other services offered. Mental Health, Cervical, COVID services seem to be taking precedence or are just more visible where I am at the moment. In saying that both my tamariki came through the mobile ear van service when they were younger and this was good. (QP 7)

Ideas for increasing the visibility of hearing services included opportunistic ear checks and/or screening in primary care and schools; providing mobile health services; increasing the awareness of community hearing health services; having church-based services; offering no-obligation hearing health assessments; and ensuring better local community education about hearing health.

Discussion

This mixed-methods study is the first study to explore Pacific peoples' ear and hearing health worldviews and the patterns of Pacific peoples' access to, and use of, mainstream and traditional hearing health care. Five themes emerged: (1) The Meaning of hearing; (2) Causes of hearing loss; (3) Consequences of hearing loss; (4) Disability; and (5) Improving health care for ear disease and hearing loss.

Pacific folklore is an oral cultural tradition with knowledge, stories, and genealogy passed down through the spoken word.²⁵ Hearing, listening, and engaging with others is important for identity, as it fosters a connection to self, family and ancestry. Previous research has found that Pacific peoples in NZ value the sense of hearing, as it enables connection with other members of their family and the wider community.¹² Other Pacific hearing health studies have also acknowledged a holistic view of health and wellbeing.^{26,27}

There was an overwhelming recognition by participants, irrespective of age, gender or place of birth, that the causes of hearing loss are due to biomedical, genetic or environmental factors, rather than spiritual or *tapu* (sacred or prohibitive) reasons, akin to the Niue worldviews study, which showed strong biomedical beliefs of health.¹² Such findings

contrast with hearing research with community members in Samoa and the Solomon Islands, revealing common beliefs that hearing loss is due to a curse or a spiritual cause.^{11,13}

The study reveals a process of acculturation that can influence how one perceives and understands hearing health, including the causes of hearing loss. Participants expressed views that showed that childhood in the Pacific Islands and adulthood in New Zealand can result in changing views of health over time. The literature on the influence of acculturation in Pacific peoples is mixed, with the literature revealing both positive and negative modifying effects on health outcomes.^{28,29}

Participants also acknowledged the importance of recognising and treating hearing loss to prevent long-term negative consequences on childhood development. Although participants recognised the common indicators of a potential hearing loss included ignoring, many also identified that hearing loss could be misperceived or denied and that spiritual beliefs, and a belief in fate, can limit a person seeking medical help.

Participants in this study who were born and raised in the Pacific believed there was less stigma of people with a disability in New Zealand than in the Pacific Islands. These findings are supported by the literature, which shows that disabled people are some of the most marginalised, discriminated, and excluded population groups in Pacific Island countries.³⁰

Very few participants used traditional remedies, which could be reflective of the study's youthful demographic. Although traditional healing practices have previously been thought to be practised more by Pacific people living in Pacific Island countries,³¹ more recent research has highlighted the high utilisation of more mainstream healthcare services by Pacific peoples in NZ.^{12,13}

The findings from this study align with studies showing that although Pacific peoples are knowledgeable, active seekers of healthcare services, they have differential experiences of quality, level of engagement and management of their health conditions.⁴ This study highlights that an explanation of the purpose of the referral, the location of the follow-up site, potential follow-up tests, and any additional costs must be explained to the patient and their families.

Satisfaction with quality and access to ear and hearing health services was low, reflecting the importance of re-orientating health systems to be more 'health reaching'.³² The study findings also highlighted the need for a relational approach to healthcare interactions, consistent with growing evidence of the importance of trust, compassion and empathy for improved health outcomes.³³

Implications of the study

This study highlights the importance of understanding the worldviews of ear disease and hearing health among Pacific peoples in NZ to inform the responsiveness of the healthcare

system. The findings show the need to reframe healthcare access from expecting better 'health seeking' from people to improved 'health reaching' of the healthcare system. For policymakers, hearing healthcare services, including disability services, should be responsive to the Pacific conceptualisation of hearing health and hearing issues. Any changes in models of hearing health services for Pacific peoples must be done in partnership with Pacific communities, particularly those impacted by ear and hearing issues.

Conclusion

Pacific peoples treasure the sense of hearing as it facilitates connection to their communities, environment, and ancestry. Ear and hearing care services can be more responsive to the needs of Pacific communities by ensuring strong, trusting relationships are built between healthcare provider and families, ensuring physical access needs are met, and being more visible within the community setting.

Strengths and limitations

The study is embedded in Pacific methodologies, providing the basis for study development, implementation, analysis, and dissemination. The two data streams are representative of the age demographic of the Pacific population in NZ.²⁰ The interview research assistant (LK) was bilingual, allowing for the collection of rich data. The lead researcher (EH), also one of the interviewers, transcribed all the interviews, facilitating data analysis. The limitations were that there were only Auckland-based interviews, and no interview participants were between the age of 26–39 years; however, questionnaire respondents were predominantly of this age group. Having only Tongan and Samoan interview participants could limit the applicability of the findings to other Pacific ethnicities due to heterogeneous Pacific perspectives.³⁴

Supplementary material

Supplementary material is available [online](#)

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Data availability. The data that support this study cannot be publicly shared due to ethical or privacy reasons and may be shared upon reasonable request to the corresponding author if appropriate.

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