

Appendix Table 2: Literature review summary.

Author; Year. <sup>REF</sup>	SS1* / SS2*	Type	Aim	Population	Methodology and methods	Key findings
The Review Team; 1989. <sup>3</sup>	SS2*	Report	To advise the Minister of Māori Affairs on the most appropriate means to achieve the needs of Māori people in policy planning and service delivery for the hearing impaired.	Māori population in New Zealand (NZ) with a focus on Māori children.	The report <i>Whakarongo Mai</i> was written in both English and Māori comprising of eight sections. The written report was prepared for the Minister of Māori affairs and reported to the Minister in August 1989. The first meeting of inquiry was held in March 1989. The report was informed through publications, discussions with members of the D/deaf community, representatives of organisations, government departments and Māori community groups, and through written submissions.	Hearing loss is creating personal and social disadvantage. Those experiencing hearing loss are often without access to their own heritage with reduced opportunities to actively participate in society as a whole, or Māori social and cultural life in particular. Thus, hearing-impaired adults can become isolated and severely disabled if they do not have access to social, technical, education and cultural facilities. Cost of services and hearing technology is high. Hearing disability imposes additional economic burdens such as consultant visit fees, hearing aids and earmoulds. The Review Team reported the cost of hearing aids have left many older Māori with little option but to suffer with their hearing impairment.
Dyall et al; 2011. <sup>10</sup>	SS1*	Journal article	To investigate whether Māori of advanced age would be interested in and able to take part in a questionnaire and several assessments for the LiLACS NZ study.	A total of 33 Kaumātua (75–79 years old) living in the Bay of Plenty and Lakes district health board (DHB) areas were recruited.	Māori led feasibility study. Kaupapa Māori methods used for recruitment and kaitiaki group of Māori elders was formed to provide tikanga Māori support for methods used. No specific methodology mentioned. Interviewer-administered questionnaire and physical assessments were conducted.	Hearing loss was found to be disruptive for participants but less than vision. This study supported the development of the LiLACS NZ large cohort study.

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Teh et al; 2014. <sup>11</sup>	SS1*	Journal article	To establish self-rated health, health-related behaviours and health conditions of Māori and non-Māori in advanced age.	Baseline data was obtained from 421 Māori (80–90 years old) and 516 non-Māori aged 85 years living in the Bay of Plenty and Rotorua districts.	Guidance sought from Māori oversight kaitiaki rūpu. Kaupapa Māori methods used for recruitment. No specific methodology mentioned. Within self-rated health, hearing disability was asked using a modified question from the 1989 Cognitive Function and Ageing Studies (CFAS I): ‘How much does your hearing interfere with your day-to-day functioning?’	A third of Māori participants had a significant hearing loss (31%; 38% for men and 26% for women). Statistically significant gender differences in hearing loss were identified between Māori men and Māori women (P-value = 0.011). Significant hearing loss was identified as less for non-Māori participants (26%; 32% for men and 21% for women). Statistically significant gender differences were noted between non-Māori men and women (P-value = 0.005), with more men suffering from hearing loss.
McAuliffe et al; 2019. <sup>12</sup>	SS1*	Journal article	To profile the prevalence and extent of expressive and receptive communication disability associated with age, sex and ethnic groups through the database of Home Care International Residential Assessment Instrument (interRAI-HC) assessment between 1 September 2012 and 31 January 2016. It further aimed to determine whether Māori, Pasifika and Asian were disproportionately represented within these data.	Of the 72193 InterRAI-HC assessments done, 16 were repeat assessments and 318 had invalid encrypted National Health Index (NHI) numbers, leaving a number of 71,859 adults ≥65 years old (89.2% European/other; 5.4% Māori; 3.1% Pasifika; and 2.3% Asian eligible).	Non-Māori led cross-sectional study using national cohort data of older adults who underwent the standardised interRAI-HC. No specific methodology mentioned. Within interRAI-HC older adults were asked about their ability to make themselves understood (expression), and their ability to understand verbal content with hearing aid normally used (comprehension).	Communication disability was identified as common among older adults. It was found 30.6% participants exhibited at least some expression disability, and 36.2% stated having at least some difficulties with comprehension. Māori, Pasifika and Asian peoples, males and those who were older were more likely to experience at least some expressive or comprehension disability relative to their European/other, female and younger counterpart. The ethnic differences identified may reflect cultural differences in language and expression, or systemic differences in healthcare access or socioeconomic position. This is yet to be explored. Gender differences in communication could be due to hearing sensitivity.

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Zhang et al; 2016. <sup>13</sup>	SS1*	Journal article	To establish associations between sensory-related disability and quality of life (QOL) using the Brief Risk Identification of Geriatric Health Tool (BRIGHT) trial database.	A total of 3817 older adults (1,710 men, 2,081 women, 26 sex not identified) residing in the Bay of Plenty, Capital and Coast and Canterbury DHBs. Non-Māori aged 75 years and older were included in the study. Māori over 60 years of age were included in the study, in view of lower life expectancy.	Non-Māori led cross-sectional study analysing baseline data of the BRIGHT trial. Participants were asked about their health including hearing and vision difficulties through interviews, followed by a questionnaire posted out to participants. No specific methodology mentioned. Hearing difficulties were assessed as part of the interviewer-administered questionnaire: 'How well do you hear?' and 'Do you use a hearing aid at all?' to assess use of hearing aids.	Moderate-severe hearing difficulties with daily tasks were reported by 17% of Māori (29/170) and 21% of non-Māori (740/3,547). Minimal hearing difficulties were reported by 19% of Māori (33/170) compared to 22% of non-Māori (794/3,547) participants, while no difficulties with hearing were reported by 64% of Māori (108/170) and 57% of non-Māori participants (2013/2,547). Ethnic-specific gender rates were not available.  In the study, 26% of participants (974/3,761) reported wearing hearing aids, with 64% reporting hearing difficulty using hearing aids and 35% not using hearing aids. In regards to these latter results, Zhang et al reported there was a miscommunication in asking participants to report difficulty with hearing aids on and as a result explained that their hearing difficulty results may have been overestimated among participants using hearing aids. Furthermore, Zhang et al did not discuss ethnic-specific hearing aid use data.
Perkins, V., & Coombes, L. 2006. <sup>14</sup>	SS1*	Confer- ence abstract	To draw attention to some inadequacies of the experience of cultural identity and hearing loss for Māori women so they can be addressed.	Seven Māori women with hearing loss. No ages available.	Māori led qualitative study consisting of one focus group. No specific methodology mentioned.	Themes that emerged from the focus group were feelings of isolation and withdrawal due to hearing loss. This made it difficult for the participants to take part in culturally significant events. Language was also noted to be vital to their cultural identity however learning of te reo Māori was mentioned as challenging for participants.

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Williams, L; 2019. <sup>15</sup>	SS1* SS2*	Viewpoint article	To describe the author's direct experi- ence as a person with severe-to-profound hearing loss.	Senior Māori re- searcher and social scientist in her 50s. Diagnosed with a progressive hearing loss 22 years prior while undertaking her PhD studies.	Māori self-case study. Used a Kaupapa Māori approach to research.	Difficulties with untreated hearing loss: having a telephone conversation, undertaking pro- fessional training that rely on oral methods of communication and function, participating fully in te reo Māori classes, facilitating qualitative re- search in the community, participating in virtual and face-to-face meetings with more than one person, explaining her deafness and commu- nication strategies, attending work events and social events as they can be stressful, chairing a panel at research conferences and participating on boards, communicating with ease within her day-to-day living situation and keeping safe from moving vehicles. Affordability of cochlear implant/s for adults is unattainable. For those with severe-to-profound hearing loss who can afford generally elect to receive privately funded CIs.

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Crisp A; 2010. <sup>16</sup>	SS2*	Master's thesis	To examine the decisions Māori families make after the diagnosis of a hearing loss in the whānau.	Twelve Māori whānau from five areas within NZ (Auckland, Huntly, Tokoroa, Rotorua and Napier). These included seven mothers and one father with children who have hearing loss, two Māori men (50 and 63 years old) with hearing loss, and two Māori women (24 and 42 years old) with hearing loss.	Māori led research. No specific methodology mentioned. Participants were recruited through word of mouth and an advert sent to health professionals in the areas of audiology and advisors on deaf children. Semi-structured interviews were conducted. Families shared their experiences of hearing loss, searching for appropriate interventions and making choices regarding rehabilitation, communication and education.	All whānau interviewed communicated through English, six whānau utilised basic terms or fully immersed in te reo Māori and three whānau communicated through sign language at home. Majority of whānau expressed the importance of their child to know te reo Māori and some whānau expressed interest in communicating via sign-language. Māori whānau experienced much of the same difficulties in obtaining a diagnosis and hearing aids/cochlear implants as non-Māori families. Problems, however, are emphasised by socio-economic factors such as limited access to healthcare, transportation and location and financial issues. Many whānau relied solely on hearing health professionals to provide them with information. A number of the parents reported problems of professionals being dismissive of observations without follow-up or their child's unresponsiveness was due to other factors than hearing loss. Professionals also did not often discuss the option of cochlear implants but rather the parents themselves asked further into cochlear implants as an option for their child. Alternatively obtaining information from deaf adults and other families of deaf children was well received.