INVITED FEATURE: MAORI HEALTH REVIEW SERIES

Hauora Maaori o ngaa karu: Maaori ocular health review

Isaac Samuels, Renata Watene

"Ki te kore he whakakitenga, ka mate te iwi."
Without vision, the people will perish. Kiingi Taawhiao

Note: The Tainui mita (dialect) is used throughout this article as the first author is of Tainui, Ngaati Hauaa descent. As a result, vowels with macrons are replaced with double vowels throughout this article (e.g. Māori becomes Maaori).

Introduction

Vision is a complex sense which has a significant impact on healthy brain development, education, and immersive interaction with the world. Ensuring vision is protected, respected, and enhanced if required, is essential in achieving Maaori health goals. *Taa* (Sir) Mason Durie claimed that the key priority within Maaori health is to be able to achieve full and active participation within society.[1] Vision loss is associated with negative social and physical health consequences beyond visual impairment, including exacerbation of chronic illnesses and increased risk of depression.[2] Thus, addressing vision loss for Maaori is a matter of striving for equity to ensure full and active participation within society is attainable.

Indigenous health inequity is an international crisis experienced by many nations and health systems worldwide.[3] Colonisation has led to loss of land, increase in communicable disease, earlier age of mortality, and a myriad of negative social determinants of health which have echoed throughout history and still have impacts today.[4] In Aotearoa New Zealand, Maaori experience poorer access to, and quality of, health care as well as substantially poorer health outcomes compared to non-Maaori.[4-7] Ocular health outcomes are not spared from this trend, with Maaori experiencing higher rates of diabetic retinopathy, cataract, ocular trauma, and keratoconus when compared to non-Maaori.[8,9]

The United Nations have formally recognised Indigenous health inequity and called for societal reform which is culturally and linguistically appropriate, and have thereby created an international responsibility to ensure that the health of Indigenous populations is protected.[3] In response to this, several Indigenous ocular healthcare delivery models have been developed and implemented. Most of these models have been utilised internationally and there has been minimal engagement at a domestic level.[10] This research indicates a clear international obligation for the development of Indigenous eye care models within Aotearoa New Zealand to address Indigenous ocular health inequities.

This review seeks to summarise the current literature surrounding Maaori eye care, comment on the current Maaori ocular health workforce, and provide insights into the role of accreditation and governance organisations in achieving Maaori eye health equity. Finally, this article seeks to reflect on what the future of Maaori ocular health care and research looks like in Aotearoa and provide a Te Ao Maaori perspective to the current state of Maaori ocular health.

Analysis of the current ocular health literature

Epidemiological evidence which explores the burden of ocular diseases within Aotearoa, particularly regarding Maaori, is lacking within formal medical literature. This is largely due to the emerging nature of this field. However, the few studies which do exist on this topic provide a glimpse into the state of Maaori eye health and the issues present.

Regarding access to care, studies have found that Maaori are more likely to present to an ophthalmologist at a later stage of disease for conditions such as cataract, keratoconus and diabetic retinopathy compared to non-Maaori.[8,9,11] This highlights issues regarding access and presentation to services for Maaori which perpetuate inequity. Disparities in accessing care and ocular disease severity impact Maaori individuals, whaanau and communities. One study showed that of 3524 patients seen over 18 months, only 4.7% identified as Maaori, which is well below the current estimated Maaori population of 17.1%.[8,12] This means that an additional 436 Maaori patients needed to be accounted for in this study in order to be representative of the current proportion of Maaori within the national population, even without considering that Maaori also have a higher proportion of ocular disease. This supports the notion that access inequities exist and impact Maaori significantly. Another study highlighted further access inequities regarding the issue of Maaori clinic non-attendance and concluded that 90% of patients not attending diabetic retinopathy screening in Northland were Maaori.[13] Regarding clinic non-attendance for Maaori, studies have highlighted high levels of deprivation and the financial burden associated with care as contributing systemic factors among others.[14] However, further in-depth investigation is required to adequately ascertain the underlying reasons as to why Maaori have higher rates of clinic non-attendance and the current evidence only scratches the surface of these issues.

A recent study identified barriers to accessing ocular health services for Maaori in the Waikato region, with driving time and distance being 27% longer for Maaori compared to non-Maaori.[15] As well as this, a recent study has also concluded that Maaori have decreased access to strabismus surgery compared to non-Maaori.[16] Although none of these studies allow us a view of the national burden of health care access inequities, this evidence indicates that there is significant inequitable access to eye care services for Maaori in Aotearoa New Zealand.

Inequities regarding Maaori cataract service provision in Aotearoa have also been highlighted, with research concluding that Maaori are more likely to have worse best spectacle corrected visual acuity at the time of prioritisation to receive cataract surgery.[11] Maaori were also found to develop cataracts eight to nine years younger than non-Maaori, whilst, again, being under-represented in eye clinic presentations.[11] This indicates Maaāori have a greater burden of rapid and early disease progression. However, Maaori are also being prioritised

for surgery with worse visual impairment, indicating disparities in cataract surgery access and delayed access to care for Maaori with severe visual impairment. Keratoconus, a corneal condition, is also more common and severe in Maaori and Pacific individuals throughout Aotearoa, with evidence indicating only 50% of Maaori attend their first specialist appointment.[17] This is inequitable when considering that 90% of Asian and European patients attend their first specialist appointment for keratoconus.[17] This again highlights emerging evidence of Maaori ocular health outcome and access inequities in Aotearoa.

The culmination of this evidence provides useful insights into the state of Maaori ocular health care in Aotearoa surrounding access to services and ocular disease severity. This encourages the medical community to consider how these inequities may be addressed. Future studies assessing ocular epidemiology may seek to capture larger populations to adequately identify and quantify the burden of ocular disease, both known and unknown. This may be best utilised alongside Indigenous methodologies such as Kaupapa Maaori methodology to decolonise the research process and enhance Maaori participant, patient, and researcher experience.[18] The development of a national eye health survey, similar to the 2016 Australian National Eye Health Survery,[19] may aid in the acquisition of accurate epidemiological data to represent Indigenous burden of ocular disease in Aotearoa. This was a multi-methodology population-based survey to determine the burden of ocular diseases throughout Australia and has provided significant insights into the state of Indigenous ocular health inequity. Although some evidence exists, we have yet to obtain data which is representative of the national burden of Indigenous ocular health inequity in Aotearoa New Zealand, an area which future research should seek to address.

Maaori ocular health workforce and the emergence of Kaupapa Maaori research

Whilst it is essential to highlight health outcome and service provision statistics from the medical literature, high-quality Maaori ocular health provision must be considered within the context of other forms of evidence. This includes commenting on the Maaori ocular health workforce, acknowledging qualitative research highlighting Maaori perspectives of ocular care, and encouraging the use of Kaupapa Maaori research and knowledge.

Firstly, there are limited Maaori eye care professionals within Aotearoa, with only 5% of the 147 vocationally registered ophthalmologists identifying as Maaori or Pasifika as of 2017.[20] There is also limited representation of Maaori in the optometry workforce, with only 1.5% of registered optometrists (16 of the total 1035) identifying as Maaori as of May 2022 (this does not include dispensing optometrists).[21] This indicates a clear gap within the workforce where Maaori are significantly under-represented. Studies have outlined the importance of overcoming the national shortage of Maaori health professionals in order to address ethnic health disparities.[22] Improving Maaori representation in the workforce will enhance health care provision for Maaori by ameliorating the cultural safety and competency of the national health workforce.[22] This is achieved as Maaori health professionals largely have Maaori cultural knowledge and experience. However, it must be noted that efforts are being made within vocational training programs such as the Royal Australian and New Zealand College of Ophthalmologists (RANZCO) to increase the number of Maaori eye doctors.

Secondly, anecdotal and emerging formal evidence highlights the importance of Maaori cultural considerations when engaging with patients in an eye care setting. For example, one Kaupapa Maaori research project conducted in the summer of 2021-2022, written by this author and others at the Waipapa Taumata Rau (The University of Auckland), highlighted the *whakaaro* (thoughts/perspectives) of Maaori patients and community members surrounding cultural considerations within ocular health care in Aotearoa.[23]

This project identified five key themes which are important to the provision of effective Maaori ocular health care. The first theme is the importance of high-quality clinician-patient communication to ensure a genuine relationship is built prior to the initiation of a clinical consultation. The second theme highlighted how historical health experiences (both personal health experiences of individuals and whaanau and NZ history, i.e. colonisation) impact health attitudes. In relation to eye care, participants highlighted the impact of colonisation and having lower socioeconomic status on their health seeking behaviours overall, decreasing their likelihood to access eye care. Thirdly, barriers to accessing eye care are systemic, including geographic location, rurality, financial cost, and travel/transport barriers for Maaori. The fourth theme highlighted the importance of *Hauora Maaori* (Maaori health) to Maaori, indicating a desire for clinicians to acknowledge the holistic nature of Maaori health. This includes providing high quality care that address all elements of *Te Whare Tapa Whaa* (the house with four walls): *taha tinana* (physical health), *taha hinengaro* (mental health), *taha wairua* (spiritual health) and *taha whaanau* (family health).[24] The final theme highlighted culturally important elements of eye care such as *tapu* (restriction/sacredness) of the head of Maaori patient's bodies and the intersection between *Te Ao Maaori* (the Maaori world) and eye health. For some Maaori, an eye examination was deemed to be rather invasive, and as a result, may be viewed as transgressing someone's tapu. To remedy this, Maaori highlighted the importance of acknowledging cultural beliefs in a clinical scenario to ensure cultural safety is achieved for Maaori patients in ocular healthcare.

These five themes allow us to begin to understand how Maaori perceive the current ocular health care system in Aotearoa and provides a glimpse into the Maaori patient experience. This was the first Kaupapa Maaori ocular health research project conducted within the Department of Ophthalmology at Waipapa Taumata Rau. As a result, this study provides foundational evidence surrounding Maaori perspectives of ocular health care in Aotearoa New Zealand. Current Kaupapa Maaori ocular research is seeking to develop Maaori engagement models and identify *whakaaro Maaori o ngaa hauora karu* (Maaori perspectives on eye health) to better understand the relationship between Te Ao Maaori, *tangata Maaori* (Maaori people), vision, and ocular diseases within Aotearoa. This research is being conducted in collaboration with Maaori and non-Maaori researchers as an effort to begin addressing Indigenous ocular health inequities.

The combination of identifying Maaori thoughts and considerations surrounding ocular healthcare in Aotearoa New Zealand, plus the addition of more Maaori ophthalmology and optometry trainees, are significant steps toward achieving an equitable ocular healthcare system in New Zealand. The prioritisation and development of an equitable ocular health system in Aotearoa will aid in addressing Indigenous ocular health inequities.

Organisational advances toward Maaori ocular health equity

The future looks bright for Maaori ocular healthcare. RANZCO are taking steps toward enhancing the Maaori ocular workforce. This organisation is increasing the number of curriculum vitae points attributed to Indigeneity (Maaori or Aboriginal/Torres Strait Islander) when applying for vocational training positions. They are also offering Maaori and Pasifika scholarships for medical students and junior doctors (PGY 1, 2, and 3) who are interested in pursuing a career in ophthalmology.[25] Furthermore, RANZCO recently signed a formal memorandum of understanding with Kaapoo Maaori Aotearoa (the support institution for blind and visually impaired Maaori) to represent their partnership and collective commitment to enhance Maaori eye health.[26] These efforts made by RANZCO means that the proportion of Maaori clinicians will increase, leading to a workforce that is more reflective of and responsive to the New Zealand population.

Other organisations, such as the Optometry Council of Australia and New Zealand (OCANZ) have also indicated their commitment to Indigenous ocular health. This includes both the development of new leaders in the Indigenous Optometry Education Network as well as the creation of an Indigenous curricula to be used in optometry education throughout Aotearoa and Australia, which is still in devel-

opment.[27] This will include education surrounding both Aboriginal/Torres Strait Islander and Maaori culture with the goal of enhancing the cultural competency and safety of optometrists in Australia and New Zealand. Locally, organisations such as Eye Health Aotearoa have developed reports, action plans and analysis tools which are focused on achieving equity and enhanced vision for all. This organisation is comprised of a multi-sector collaborative of representatives from all corners of the eye sector, allowing a heterogenous perspective of New Zealand's eye health system.

Similarly, the Waipapa Taumata Rau is making efforts to begin addressing Maaori ocular health inequities, both clinically and within academia. A big step toward achieving Indigenous equity was the appointment of Maaori optometrist Renata Watene to Kaiaawhina for the School of Optometry and Vision Science (SOVS). This role has ensured that the SOVS is accountable in the pursuit of becoming more culturally safe and achieving equity for Maaori eye health in Aotearoa. The New Zealand Vision Bus was officially launched in June 2022 and has been operating in South Auckland, offering free eye examinations and eyeglasses to students in low decile schools who otherwise may not be able to afford them. This directly serves Maaori school children with visual impairments, providing a vehicle to begin addressing Maaori ocular health inequities in children. Researchers in the department of ophthalmology are also beginning to develop a Kaupapa Maaori engagement framework, with the aim to enhance ocular practitioners' cultural competency, safety, and training. This framework builds upon previous Maaori health and engagement models, such as Te Whare Tapa Whaa, the Hui Process, and the Meihana model, but is embedded within *puuraakau* (Maaori stories) and uses the method of storytelling to create a Kaupapa Maaori ocular health framework.[28,29]

Te Ao Maaori viewpoint — a wero (challenge) to all

Using the Meihana model and the *waka-haurua* (double hulled canoe) as a metaphor,[29] these authors would like to put out a challenge or *wero* to the readers of this article. Currently, Maaori ocular health professionals and trainees are attempting to navigate uncharted waters, without the clarity of stars to guide us on our journey — like a cataract, the view is cloudy. We are in a *waka* (canoe) with a small number of people, including both Maaori and non-Maaori allies. Of these individuals, some have paddles and some do not. Some have paddles but do not know how to row and the currents attempting to keep us back and preventing progress are significant, old, and still run strong.

This article is a call for both Maaori and non-Maaori to jump into the waka and join us on a quest to achieve equity for Maaori in Aotearoa New Zealand. As people begin supporting this kaupapa and awareness is raised, we will begin to see the clouds disappear and the sky become visible, allowing us to navigate using the stars above to a place where Maaori ocular health care provision is prioritised and equitable in Aotearoa.

How can we jump in the waka?

The benefits of Hauora Maaori teaching becoming common place in medical education are significant and vast, resulting in current medical students being largely aware of the importance of Maaori health beliefs. Maaori beliefs surrounding the tapu nature of the head is important to consider when conducting an ocular examination with Maaori patients. It is important to acknowledge that some patients may have such cultural beliefs, and to be humble and ask Maaori patients if this is something they would like taken into consideration as part of their care. If so, ensuring informed consent is repeated during ocular examinations at each stage of examination, rather than merely at the beginning, ensures that Maaori are in control of their care and have autonomy over their bodies. For example, asking for consent before touching the forehead, eyelids, or other periorbital structures at each stage of examination. These steps make dramatic impacts toward achieving cultural safety and ensuring Maaori patients feel that their health and cultural beliefs are respected.

Future research should seek to build on the knowledge of Maaori ocular healthcare to begin understanding and addressing Indigenous ocular health inequity in Aotearoa New Zealand. There is a significant gap in the current academic literature and although guidelines are currently limited, there are projects being developed and conducted which seek to address this gap and enhance cultural safety training for ocular health clinicians working in Aotearoa New Zealand. These authors challenge readers to consider being part of this journey through contributing to Hauora Maaori and/or ocular health research, thereby making conscious efforts towards the provision and enhancement of cultural safety within the Aotearoa New Zealand healthcare system.

Conclusion

While this article may initially paint a bleak picture for the current state of Maaori eye health, it is important to note the significant steps and transformation that is occurring in our communities. There is limited evidence of Indigenous ocular health inequities in Aotearoa New Zealand, and further investigation is required to quantify the burden of Maaori eye disease and visual impairment compared to the national population. However, it is encouraging to see Kaupapa Maaori research emerging to identify what effective provision of ocular health care may look like in the future. Organisational change is slow but progressing. The aspirational goals of organisations such as RANZCO and OCANZ are setting the foundation for continued commitment toward equitable Maaori ocular health outcomes. The authors have hope for the future regarding the provision of Maaori ocular health care in New Zealand. There is an increasing number of Maaori ophthalmology and optometry trainees, large research projects being carried out which respect Kaupapa Maaori principles, and identification of the health system's shortcomings and inequities. In spite of these inequities, we must identify and use our strengths to strive for a brighter future and ensure that the vision of Maaori in Aotearoa is protected.

Mauri ora.

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About the authors

› Isaac Samuels is a medical student having recently completed his BMedSci (Hons) degree in ophthalmology in 2022 and will be a trainee intern at Middlemore hospital in 2023. Isaac has a deep passion for Maaori eye health and aspires to become an ophthalmologist to serve his communities and enhance the vision of all throughout Aotearoa.

› Renata Watene is the Kaiaawhina (Maaori advisor/teaching fellow) of the school of optometry and vision science at the University of Auckland and the owner of Occhiali optometrists in Ponsonby and Stonefield's. She is passionate about taking steps toward Maaori ocular health equity and has been advocating for Maaori eye health for many years.

Correspondence

Isaac Samuels: Isam153@aucklanduni.ac.nz