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Implementation of the optometry Aboriginal and Torres Strait Islander health curriculum framework

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ABSTRACT

Clinical relevance: There is now an Optometry Council of Australia and New Zealand (OCANZ) accreditation requirement for Australian and Aotearoa New Zealand optometry programs to ensure students can provide culturally safe care for First Nations Peoples. To assist programs, OCANZ developed the *Optometry Aboriginal and Torres Strait Islander Health Curriculum Framework (Optometry Framework)*.

Background: The objective of this study was to evaluate early progress towards the implementation.

Methods: All seven Australian optometry programs were invited to complete a modified version of the OCANZ curriculum mapping tool. Where available, online unit outlines were reviewed to verify and supplement the data. Curriculum maps were synthesised using qualitative content analysis.

Results: None of the five participating programs had a standalone Aboriginal and Torres Strait Islander health unit; instead, programs were integrating content into core units. Only 25% of the units with relevant content had a directly related learning outcome. All programs had at least some content that was either directly or indirectly related to each of the *Optometry Framework* themes, and included some content related to novice and intermediate levels of learning. Four programs had content related to entry to practice levels of learning. The average total duration of directly related content in programs (excluding clinical placements) was 18 hours. Not all programs offered an Aboriginal and Torres Strait Islander health setting clinical placement opportunity. Directly related assessment was minimal in most programs, where the format was predominantly reflective journals or questions within written examinations.

Conclusion: Progress has been made in implementing the *Optometry Framework*; however, further efforts are required. Programs need to integrate additional directly related learning outcomes, content (particularly entry to practice level learning), and assessment. Further curriculum enhancements will improve the likelihood of optometry students acquiring the necessary capabilities for providing culturally safe care.

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Introduction

Indigenous¹ peoples have the right to healthcare free from discrimination;¹ however, Aboriginal and Torres Strait Islander people report a reluctance to access health services due to the absence of culturally safe care, past mistreatment, racism and fear.² Embedding cultural safety curricula in higher education has been recognised as one strategy to reduce health disparities.³

In 2014, the Australian Government released the national *Aboriginal and Torres Strait Islander Health Curriculum Framework*, with the aim of preparing graduates of health professional programs to provide culturally safe health services to Aboriginal and Torres Strait Islander Peoples.⁴ At about the same time, the Optometry Council of Australia and New Zealand (OCANZ) revised the accreditation standards to require ‘cultural competence’ education (now ‘cultural safety’ education) in optometry programs.⁵

To support and guide optometry programs to meet the new standard, OCANZ subsequently released the *Optometry Aboriginal and Torres Strait Islander Health Curriculum*

Framework (hereafter the *Optometry Framework*), an adaptation of the national framework specific to optometry.⁶ However, there is little understanding outside of optometry about the progress programs have made in implementing the *Optometry Framework*.

The *Optometry Framework* provides key recommendations on curriculum content, learning outcomes and assessment. There are three themes: (1) integrating cultural safety into reflective practice and professionalism; 2) history and diversity of Aboriginal and/or Torres Strait Islander peoples, the post-colonial experience and implications for population health and health care practice; and (3) delivery of culturally safe eye health care in partnership with Aboriginal and/or Torres Strait Islander health professionals, organisations and communities. How this curriculum is actually delivered is at the discretion of the program and contingent upon several key factors, such as leadership, partnerships and resources.

A review by Anstice et al.⁷ provides insights into early progress made by the Australian and Aotearoa New Zealand optometry programs in implementing the *Optometry Framework*. Some programs have integrated Indigenous

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.

¹The term Indigenous is respectfully used in this context when referring to First Nations Peoples worldwide/more than one country. When referring to the First Peoples of Australia, Aboriginal and Torres Strait Islander is used except when citing literature.

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ways of knowing, being and doing into the curricula, online education modules, and clinical placements in Indigenous communities. There are examples of co-designed and co-delivered curriculum with Indigenous partners. The need to ensure that students can critically reflect on the content and that content is scaffolded throughout the program to adequately prepare students for clinical placement were highlighted in the review.

Key challenges reported were the lack of experienced and competent educators in this field and attracting and supporting Indigenous students through to completion. Some programs were being supported by universities to strengthen the capabilities of educators through organisation-wide workshops and changes in staff recruitment practices. However, it was concluded that considerable additional work is needed to achieve the goal of graduating optometrists who can provide culturally safe care. Although the review offers valuable insights, it presented illustrative examples of education initiatives from optometry programs and not a comprehensive mapping of the curriculum integrated into programs.

In a recent survey of leaders of Australian optometry programs and educators,⁸ it was reported that most programs had made at least partial progress in establishing the supports necessary for successful implementation of the *Optometry Framework*, such as leadership, strategy, community partnerships, staff capacity, student support and resourcing, with opportunities to improve the availability of professional development on Aboriginal and Torres Strait Islander health for educators. The curriculum was mainly being delivered by non-Aboriginal and/or Torres Strait Islander optometry educators, as well as Aboriginal and/or Torres Strait Islander educators from elsewhere in the university and Aboriginal and/or Torres Strait Islander guest lecturers from communities and external organisations.

Only 37% of the educators in Australian optometry programs felt adequately prepared to deliver this curriculum, and only 6% felt prepared to assess this curriculum. Furthermore, not all programs were providing clinical placement in an Aboriginal and/or Torres Strait Islander health care setting. However, the study focussed on barriers and enablers, not what aspects of the *Optometry Framework* had been implemented.

Curriculum mapping is a systematic process that can provide a multi-dimensional overview of the curriculum, including what, how, and when it is taught and assessed.⁹ It can identify gaps and inform future improvements. There is only one relevant curriculum mapping study in optometry. Truong et al. investigated how programs prepared students to work with culturally diverse patients.¹⁰ Although cultural competence curriculum was included in some programs, the structure, content, teaching methods and number of hours varied. Gaps identified included a lack of assessment of cultural competence and the absence of the use of a framework underpinning the teaching of cultural competence. Regardless, the study predates the introduction of the *Optometry Framework* and did not specifically explore Aboriginal and Torres Strait Islander health or cultural safety.

The objective of this study was to evaluate early progress towards implementation of the *Optometry Framework* into Australian optometry programs.

Methods

The study adhered to the tenets of the Declaration of Helsinki and informed written consent was obtained prior to participation. Ethics approval was obtained from Queensland University of Technology Human Research Ethics Committee (2000001134). The principles outlined in the *Consolidated Criteria for Strengthening Reporting of Health Research Involving Indigenous Peoples: The Consider Statement* were considered in the design and reporting of this study.

Participants

Leaders of all seven Australian optometry programs were invited to participate.

Curriculum mapping tool

A modified version of the curriculum mapping tool developed by OCANZ¹¹ was used. It comprised sections for each of the three themes of the *Optometry Framework* and sub-sections for 17 of the 25 *Optometry Framework* learning outcomes (eight learning outcomes had been combined with other similar learning outcomes by the designers of the tool). For the purpose of this research, 'subthemes' will be used in place of *Optometry Framework* 'learning outcomes' to avoid confusion when reporting on learning outcomes associated with units of study.

For each subtheme, participating programs were required to complete the relevant unit code and name, year level, if there was an associated unit learning outcome, a description of the content (including mode of delivery), duration of the content, and any associated assessment. The term 'unit' refers to the smallest complete component of study that focusses on a subject or topic and forms part of a course; where a course comprises several units (with external handbook data) and each unit is assigned credit points towards a degree depending on the number of learning hours.

Protocol

Participating program leaders could either choose to complete the curriculum mapping tool (in Microsoft Word format) or delegate the task to a suitably experienced staff member. The mapping was conducted from May to June 2021. Where available, online unit outlines/guides were also reviewed by one of the researchers (KP) to verify and supplement data.

Data analysis

Maps were summarised using qualitative content analysis following the method outlined by Schreier.¹² An overview of the coding frame is provided in Table 1. The main categories were primarily derived from the headings used in the mapping template and codes within each category were inductively determined (data-driven approach) by two of the researchers (SB and KP) independently. The coding frame was tested on two of the curriculum maps independently by the same two researchers and discrepancies were discussed until agreement was reached. The remaining maps were coded by one researcher (KP). The results were then discussed with the full research team. Coded data were analysed using descriptive statistics in Excel (Microsoft Office 2019, Version 2104).

Table 1. Coding frame.

Categories	Codes/description
University	University name
Framework theme	Theme one, theme two, theme three
Framework subtheme	1a, 1b, 1c, 1d, 1e, 1f, 2a, 2b, 2c, 2d, 3a, 3b, 3c, 3d, 3e, 3f, 3g
Framework learning level	Novice, intermediate, entry to practice
Unit [†] code	Unit code and name
Year level	Year level of unit
Unit learning outcome	Explicit, implicit, none, unclear/unspecified or N/A
Content [‡]	Explicit, implicit, none, unclear/unspecified or N/A
Content description	Text description
Content delivery mode	Tutorial/seminar/group discussion/project group work, practical lab, workshop, module/online exercise, immersion/field trip, problem-based learning, case-based learning, clinic observation, clinic practice, clinic unspecified, N/A
Content duration	Explicit hours, implicit hours, unclear/unspecified or N/A
Lesson [§]	Unique lesson, repeat lesson or N/A
Assessment	Explicit, implicit, no, unclear/unspecified or N/A
Assessment description	Text description, unclear/unspecified or N/A
Assessment format	Quiz, exam, reflective journal, clinical skills, case study, critique of literature, presentation, participation/attendance/completion, case report, oral exam, unclear/unspecified, N/A
Comments	Text

[†]A unit is the smallest component of study that focusses on a subject or topic and forms part of a course; where a course comprises several units and each unit is assigned credit points towards a degree depending on the number of learning hours.

[‡]Content directly related to the *Optometry Framework* (i.e., used key words associated with the *Optometry Framework* subtheme), was coded 'explicit'. Content indirectly related to the *Optometry Framework* was coded 'implicit'.

[§]Where a lesson (topic within a unit) covered multiple *Optometry Framework* subthemes, the code 'unique lesson' denotes initial occurrence, and 'repeated lesson' refers to subsequent mentions in the completed mapping template.

Results

Five of the seven programs (71%) participated. Three of the programs had been established more than 50 years ago, one program 10–15 years ago and one program less than 5 years ago. For two of the five programs, 100% of the content mapped was able to be verified with information available online. For the remaining three programs, between 88% and 91% of the content could be verified.

Units and learning outcomes

Across all programs, 32 units contained Aboriginal and Torres Strait Islander health content. Only eight (25%) of the units had an explicit Aboriginal and Torres Strait Islander health learning outcome associated with the content, with keywords such as cultural safety, Aboriginal and Torres Strait Islander Peoples and cultures, racism, privilege, and social determinants of health.

Content

No program had a standalone unit dedicated to Aboriginal and Torres Strait Islander health, instead content was integrated across core (compulsory) units. Content was either directly and clearly related to Aboriginal and Torres Strait Islander health (explicit) or indirectly related (implicit). Programs reported content was described in this study as a 'lesson'. Each different mode of delivery was treated as a separate lesson (e.g., an 8-hour module and cultural immersion experience would be treated as two 4-hour lessons [module and cultural immersion]). A single 'lesson' (topic within a unit) could contribute to multiple *Optometry Framework* subthemes. A 'unique lesson' refers to the initial occurrence, and 'repeated lesson' refers to subsequent mentions of the same lesson in the completed mapping template.

Programs included on average 18 (range 11 to 36) unique explicit and/or implicit lessons related to Aboriginal and Torres Strait Islander health (e.g., a workshop on racism and privilege [explicit lesson] or a legal, ethics and professionalism lecture [implicit lesson]). Of all unique lessons in

a program, the proportion of explicit lessons ranged from 17% to 100%. The average total duration of explicit content (excluding clinical placements) in programs was 18 hours (range 12 to 27 hours).

The number of programs that had at least some content (explicit and/or implicit) related to the *Optometry Framework* themes and subthemes is given in Table 2. All programs had at least some explicit and/or implicit content related to each of the three *Optometry Framework* themes, and most (60% to 100%) covered each of the *Optometry Framework* subthemes. There was one exception, subtheme 2d (Provide students with opportunities to incorporate strategies for delivering health care and designing population health and health workforce policy that builds trust and relationships with Aboriginal and/or Torres Strait Islander Australians?), which was addressed by only two programs.

Mapping of explicit content to the *Optometry Framework* themes and subthemes for each optometry program is given in Table 3. The mapping of explicit content shows subthemes: 1f – Provide opportunities for students to incorporate anti-racist, social justice and affirmative action approaches in health care practice that addresses the social determinants of health for Aboriginal and/or Torres Strait Islander Peoples; 2d – Provide students with opportunities to incorporate strategies for delivering health care and designing population health and health workforce policy that builds trust and relationships with Aboriginal and/or Torres Strait Islander people; 3f – Provide opportunities for students to apply principles and practices of cultural safety in the clinical training program; and 3g – Offer opportunities for students to demonstrate strategies for personal and professional leadership, lifelong learning and resilience in working with health system challenges to cultural safety, including in partnership with Aboriginal and/or Torres Strait Islander health professionals and leaders), all of which are entry to practice level learning, were least well covered.

Three programs provided a learning experience in an Aboriginal and Torres Strait Islander health clinical setting. One program provided an eight-hour observational placement to all students and two other programs provided a student led and/or student assisted placement for 1 day to 2 weeks to approximately 70% of the students.

Table 2. Number of optometry programs with explicit and/or implicit content and assessment related to *Optometry Framework* subthemes.

Theme	Subtheme	Learning Level [†]	Number (%) of programs with content		Number (%) of programs with assessment	
			n	%	n [‡]	%
Theme 1: Reflective practice and professionalism	Culture (1a)	N	5/5	100%	2/3	67%
	Racism (1b)	N	5/5	100%	2/4	50%
	White privilege (1c)	I	4/5	80%	2/4	50%
	Cultural safety theory (1d)	E	4/5	80%	2/4	50%
	Self-reflexivity (1e)	E	4/5	80%	3/4	75%
	Anti-racist/social justice approaches (1f)	E	3/5	60%	2/4	50%
Theme 2: History, diversity and colonisation	Diversity (2a)	N	5/5	100%	3/5	60%
	Colonisation (2b)	N/I	5/5	100%	3/5	60%
	Epidemiology (2c)	N	5/5	100%	3/5	60%
	Health workforce policy (2d)	E	2/5	40%	2/5	40%
Theme 3: Cultural safety and partnership	Dominant paradigm (3a)	N	4/5	80%	3/5	60%
	Indigenous [§] professionals/organisations (3b)	N/I	5/5	100%	2/5	40%
	Clinical management (3c)	N/I	5/5	100%	3/5	60%
	Organisational culture (3d)	I	4/5	80%	4/5	80%
	Partnerships (3e)	I	5/5	100%	2/5	40%
	Cultural safety application (3f)	E	4/5	80%	3/5	60%
	Lifelong learning (3g)	E	4/5	80%	3/4	75%

[†]N = novice, I = intermediate and E = entry to practice.

Table 3. Mapping of explicit content and assessment related to *Optometry Framework* subthemes by optometry program green indicates yes, red indicates no and grey indicates unknown due to missing or inadequately described entries.

Theme	Subtheme	Level [†]	University A		University B		University C		University D		University E	
			Content	Assessment	Content	Assessment	Content	Assessment	Content	Assessment	Content	Assessment
Theme 1: Reflective practice and professionalism	Culture (1a)	N										
	Racism (1b)	N										
	White privilege (1c)	I										
	Cultural safety theory (1d)	E										
	Self-reflexivity (1e)	E										
	Anti-racist/social justice approaches (1f)	E										
Theme 2: History, diversity and colonisation	Diversity (2a)	N										
	Colonisation (2b)	N/I										
	Epidemiology (2c)	N										
	Health workforce policy (2d)	E										
Theme 3: Cultural safety and partnership	Dominant paradigm (3a)	N										
	Indigenous [§] professionals/organisations [‡] (3b)	N/I										
	Clinical management (3c)	N/I										
	Organisational culture (3d)	I										
	Partnerships (3e)	I										
	Cultural safety application (3f)	E										
	Lifelong learning (3g)	E										

[†]N = novice, I = intermediate and E = entry to practice.

[‡]Indigenous is respectfully used to refer to Aboriginal and Torres Strait Islander Peoples.

[‡]Where denominator does not equal 5, this is due to missing information from programs.

[§]Indigenous is respectfully used to refer to Aboriginal and Torres Strait Islander Peoples.

All programs used multiple modes to deliver the curriculum. However, of the total 88 unique lessons across all programs, lectures and tutorials were the most frequent modes of delivery, accounting for 50% of the unique lessons (Figure 1).

Assessment

As with content, assessments were either directly and clearly related to Aboriginal and Torres Strait Islander health (explicit) or indirectly related (implicit). An example of an explicit assessment was an Aboriginal and Torres Strait Islander case study where students would focus on a case with an Aboriginal and/or Torres Strait Islander patient and provide recommendations, or answer questions about what actions they should take, whereas an example of an implicit assessment was a reflective journal of clinical experiences not in an Aboriginal and Torres Strait Islander healthcare setting or with an Aboriginal and Torres Strait Islander patient.

Although all programs included some form of assessment related to each of the *Optometry Framework* themes, many subthemes were not being assessed. The proportion of

programs with assessment related to each *Optometry Framework* subtheme ranged from 40% to 80% (Table 2). It should be noted that some programs did not provide any information about assessment for some lessons ($n = 1$ program) or stated that there was assessment but did not provide further details ($n = 2$ programs). Mapping of explicit assessment to the *Optometry Framework* themes and subthemes for each optometry program is given in Table 3.

Of the total 21 unique assessments across four of the programs (one was excluded from analysis due to missing information), reflective journals and examinations were the most common formats, accounting for over 50% of the unique assessments. Most assessments were integrated within a larger assessment (e.g., a few questions within a 100-question multiple-choice exam). Eleven unique assessments (52%) were explicit and 10 (48%) were implicit.

Discussion

The objective of this study was to evaluate early progress towards the implementation of the *Optometry Framework* into Australian optometry programs. The study found that programs

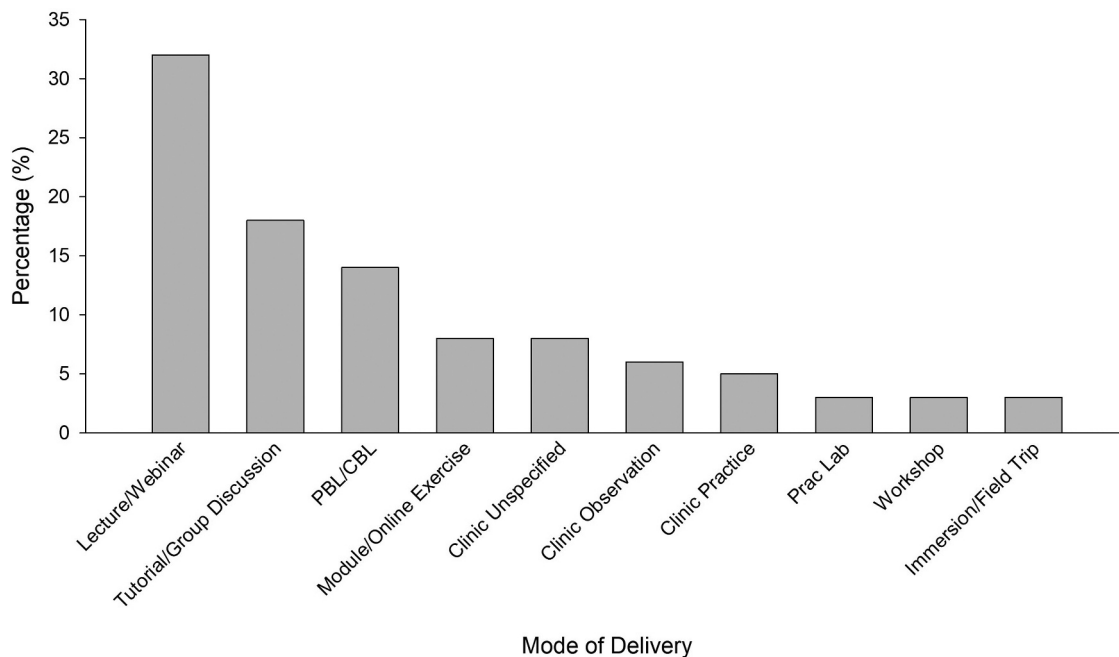


Figure 1. Frequency of delivery mode for lessons (calculated as the percentage of total lessons [88]) on Aboriginal and Torres Strait Islander health across all programs).

had integrated content across multiple units. However, few units had an explicitly stated Aboriginal and Torres Strait Islander health learning outcome. All programs had implemented content related to each *Optometry Framework* theme and most programs had implemented content that was either directly or indirectly related to each subtheme.

There was better coverage of subthemes that were novice and intermediate levels of learning than subthemes that were entry to practice levels of learning. Not all programs offered a clinical placement opportunity in an Aboriginal and Torres Strait Islander health setting. Directly related assessment was minimal in most programs.

Compared with previous curriculum mapping of optometry programs,¹⁰ this study found that the number of hours of explicit Aboriginal and Torres Strait Islander health curriculum in each year level exceeded the number of hours of cultural competency curriculum reported in 2013.¹⁰ The true difference is likely to be more pronounced, as most of the content identified in 2013 was only indirectly related to Aboriginal and Torres Strait Islander health.

Curriculum mapping studies have also been conducted in medicine, nursing, nutrition and dietetics, occupational therapy, radiation therapy, and health promotion.^{13–19} As with optometry, other health programs have typically integrated content and have not had a standalone unit on Aboriginal and Torres Strait Islander health. The exception is nursing, where a standalone unit is an accreditation requirement.²⁰ It is considered best practice to have a standalone unit in the first year, as well as integrated content across a program¹⁴ to ensure that students acquire foundational knowledge before engaging in practical skills and clinical placements.

Well-constructed unit learning outcomes are integral for clearly indicating to students what they are expected to know and achieve. Unit learning outcomes also guide assessment, which drives student learning. Yet, there were few explicit unit learning outcomes related to Aboriginal and Torres Strait Islander health in the optometry programs participating in this study. This finding may be in part attributed to concerns

about the high number of learning outcomes in the *Optometry Framework*.⁸

As part of a recent revision of the national *Aboriginal and Torres Strait Islander Health Curriculum Framework*,²¹ the original 51 learning outcomes were replaced with four that target higher-order learning. The learning outcomes in future versions of the *Optometry Framework* could be reduced and simplified in a similar way to facilitate integration into optometry curricula.

One area of the curriculum particularly not well covered by optometry programs was anti-racism (subtheme 1f, Provide opportunities for students to incorporate anti-racist, social justice and affirmative action approaches in health care practice that addresses the social determinants of health for Aboriginal and/or Torres Strait Islander Peoples). This is similar to the findings of a literature review on racism, anti-racism and whiteness in nursing education that suggest there is minimal explicit teaching on anti-racism.²² Taylor et al.²³ have found reluctance among health educators to incorporate teachings on racism and anti-racism practices within Aboriginal and Torres Strait Islander health education, stemming from the perception that such topics are inherently viewed through a negative, deficit focused, and overly generalised lens. Therefore, support and professional development for educators to teach racism and anti-racism could be beneficial.

The Diversity Council Australia has published an evidence-based framework for anti-racism action, comprising six organisational 'keys' aimed at eradicating racism within Australian workplaces.²⁴ Each key is supplemented with reflective questions, practice examples, and additional resources for further learning. Engaging with such a framework would enhance the capacity of educators to address racism in the curriculum and their teaching practices, and importantly, how it can be actively prevented and reduced.

Not all optometry programs had a placement in an Aboriginal and Torres Strait Islander health settings; despite its widely recognised value.¹⁴ Of the programs that had a clinical placement, the proportion of students who attended the placement varied. In other health professions

where placements have been offered to *all* students, the reason was to provide care to an underserved community,²⁵ or to meet program funding conditions that require students to complete placements in regional/remote areas (acknowledging that the majority of Aboriginal and Torres Strait Islander people reside in non-remote areas).²⁶ Some programs have deliberately limited placements because of scarce availability,²⁷ and challenges arising for students in relation to travel and accommodation in remote locations,²⁸ and in an effort to minimise any risk to the community of culturally unsafe practices (e.g., by students who might have shown hostility towards Aboriginal and Torres Strait Islander health education).^{28,29} Indeed, a review of Australian Government health workforce programs found that mandating all students to undertake a rural placement, regardless of interest in rural health, is counterproductive and strains resources unnecessarily.³⁰

Where placements have been limited to only some health students, programs have required students to submit an expression of interest,^{28,31} volunteer,^{32,33} or select an elective unit.²⁷ It is recommended in the *Aboriginal and Torres Strait Islander Health Curriculum Framework* that suitability of a student for placement in an Aboriginal and Torres Strait Islander health setting should be evaluated through a combination of an application and evaluation of behaviours and attitudes in the program.⁴ Selection criteria that have been used for placements in Aboriginal and Torres Strait Islander health settings have included self-confidence, resilience in an unfamiliar environment, consistent performance on previous placements, prior experience working with Aboriginal and Torres Strait Islander people and a genuine interest in future work within this setting.^{31,34}

In this study, the duration of placements in an Aboriginal and Torres Strait Islander health setting was quite short (from 1 day to 2 weeks). Although short placements have been found to be satisfactory for developing knowledge of the social determinants of health and confidence,^{32,33} longer placements are more effective for development of skills.³⁵ Additionally, students can be overwhelmed by brief, isolated placements in Aboriginal and Torres Strait Islander health settings.^{33,36} Therefore, health educational programs should carefully consider the duration of clinical placements for students.

In this study, all placements centred on clinical care; however, there is considerable value in students engaging in non-clinical activities both within a health setting and in the community. These activities may include shadowing or assisting health professionals from various disciplines, undertaking administrative duties, and participating in community events.³³ Such experiences have been shown to challenge preconceived stereotypes and biases, deepen our understanding of the practical implications of the social determinants of health, foster an appreciation of health professionals from other disciplines, and minimise stress associated with complex clinical care.^{33,37}

Few assessments were reported in optometry programs, with reflective journals being the most frequently used type and predominantly based on general clinical care. For example, one program in this study required students to reflect on their strengths, weaknesses and intentions for further learning following episodes of clinical care. However, the critical reflection required for cultural safety is vastly different. For example, reflection could include whether a cultural worldview would be challenged during clinical care and intentions for monitoring internal and external responses to cultural and social

differences.²⁷ Regardless, the assessment of reflective journals has challenges.

Non-Indigenous assessors in physiotherapy have reported a range of personal, pedagogical and systemic challenges.³⁸ Challenges included internal conflicts as they attempted to balance their discomfort and inexperience with the subject, while being mindful of the need to minimise dependency on Indigenous colleagues. The process of evaluating reflections and providing written feedback to students proved emotionally demanding, particularly when the reflections were poor. There was also a responsibility to ensure grading practices did not perpetuate racism. Structural limitations, such as inadequate budgeting for marking time and staff, added further strain. To ensure successful adoption of reflective assessments in optometry, sufficient staffing, workload, briefing sessions, and ongoing professional development for assessors are essential.

The second most frequently used form of assessment was examination questions. However, this format typically provides little or no opportunity for constructive feedback to students³⁹ and mostly involves lower-order learning.⁴⁰ More thought needs to be given to the number and types of assessments, especially those aimed at assessing higher-order learning in an authentic context relevant to Aboriginal and Torres Strait Islander health. Assessment tasks that integrate student self-assessment, empower students with agency and leadership roles, foster collaboration and engagement between students and other stakeholders, and prioritise communication and other non-written skills should also be considered.⁴⁰

Although this was the first study to map the Aboriginal and Torres Strait Islander health curricula into Australian optometry programs, several limitations should be considered. First, mapping was completed by programs themselves, which could have led to biases in data collection and inaccuracies in interpretation.

Second, not all missing data could be retrieved through publicly available online data. Additionally, it should be noted that optometry programs will have made further progress since the data were collected for this baseline study. Further evaluations are needed to assess the impact of ongoing integration of Aboriginal and Torres Strait Islander health curriculum. Indeed, a very recent study reporting on Indigenous health education practices in optometry programs across Australia and Aotearoa New Zealand suggest additional progress has been made in some areas.⁷ Future studies should consider investigating the learned curricula, as well as who is delivering and assessing the curriculum (including details about appointment level, employment fraction and cultural identity).

The study findings suggest that there has been progress implementing the *Optometry Framework*, but there is more work to be done. Programs need to include more explicitly stated learning outcomes to raise perceived importance and drive the assessment of the Aboriginal and Torres Strait Islander health curriculum. Programs can be improved by including more directly related content, with a specific focus on higher-order learning (entry to practice level). There is also an opportunity for programs to consider authentic experiences beyond clinical placements, such as participation in community activities.

Finally, additional assessment is required, particularly at novice and intermediate levels of learning, to ensure students are adequately prepared for clinical placement in Aboriginal and Torres Strait Islander health settings. These changes are required to provide a more comprehensive learning experience that adequately prepares students to be able to provide

care that might be deemed culturally safe by Aboriginal and Torres Strait Islander Peoples.

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