

Cultural safety in practice: An evaluation of an online learning module series in preparing physiotherapy students for practice



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Abstract

Purpose Physiotherapists play an important role in the provision of safe and effective healthcare for First Nations Australians; however, little is known about how entry-level physiotherapy students can be supported to learn about cultural safety prior to engaging with First Nations Australians in professional healthcare settings. This study aimed to evaluate the effect of an online learning module in developing entry-level physiotherapy students' cultural capabilities and awareness of cultural safety in preparation for professional practice and delivery of physiotherapy care for First Nations Australians.

Methods This mixed methods study was implemented in a population of undergraduate and masters entry-level physiotherapy students at The University of Queensland, Australia. Participants engaged with a series of online modules, underpinned by constructivist pedagogical principles, integrated as a core component of their curriculum studies. Participants completed the Cultural Capability Measurement Tool (CCMT) before and after the intervention, and their perspectives on learning experiences were subsequently explored through qualitative focus group interviews, which were transcribed and subjected to reflexive thematic analysis.

Main findings Total CCMT scores were significantly higher following completion of the online module series ($n = 52$; $P < .05$) and statistically significant improvements were demonstrated across five individual items (items 5, 18, 19, 20 and 22). Three themes were generated from focus group data ($n = 10$): establishing a fundamental understanding of cultural safety in preparation for placement; online learning supports self-reflection; and seeking person-to-person reflection and experiences.

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<https://doi.org/10.1016/j.fnhli.2025.100065>





Principal conclusions The results indicate that physiotherapy students' cultural capabilities improved after completing the online learning module series. Participants highlighted that the module series developed their foundational knowledge of cultural safety and allowed them to engage in self-reflection prior to practical placement. Participants emphasised the desire to engage in person-to-person reflection following the self-paced online module series and expressed the need for additional opportunities to participate in immersive experiences with First Nations Australians to support their own cultural safety learning journey.

Keywords: First Nations Australians; Aboriginal and Torres Strait Islander peoples; Cultural safety; Physiotherapy; Online; Education

Highlights

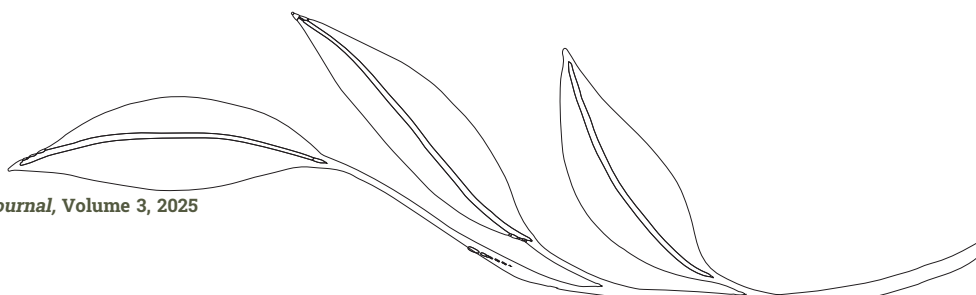
- An online learning module series is an effective teaching tool for preparing physiotherapy students with foundational knowledge regarding cultural safety.
- Physiotherapy students' self-reported cultural capabilities, measured by the Cultural Capability Measurement Tool, improved after completing an online learning module series.
- Physiotherapy students seek additional practical learning opportunities to embed their knowledge and support their cultural safety journey.

Introduction

There is growing momentum in the Australian physiotherapy profession to develop the cultural safety skills and cultural capabilities of physiotherapists, given their important role in delivering care to Aboriginal and Torres Strait Islander peoples (hereafter respectfully referred to as First Nations Australians in this study) ([Australian Physiotherapy Association 2024](#)). The term cultural safety was first proposed by Dr Irihapeti Ramsden alongside Māori (First Nations peoples of Aotearoa New Zealand) nurses in the 1990s to combat the effect that the healthcare system had on First Nations peoples ([Papps and Ramsden 1996](#); [Ramsden 2015](#)). The understanding and practice of cultural safety has developed over time, although no consistent or unified definition of cultural safety has been agreed upon. Despite this ambiguity, it is most accepted amongst the contemporary literature that cultural safety in

healthcare settings encompasses the notion that health professionals should engage in ongoing self-reflection, hold themselves accountable and reduce bias to deliver culturally safe care with the aim of health equity ([Curtis et al. 2019](#)).

National governing and regulatory bodies require physiotherapists within Australia to practice and provide culturally safe and respectful care ([Australian Health Practitioner Regulation Agency 2023](#); [Physiotherapy Board of Australia and Physiotherapy Board of New Zealand 2023](#)). Additionally, higher education providers responsible for delivering entry-level physiotherapy programs are required by national accreditation standards to address and provide evidence of how they support physiotherapy students and graduates to develop key competencies defined throughout the Physiotherapy practice thresholds ([Australian Physiotherapy Council n.d.](#); [Physiotherapy](#)





Board of Australia and Physiotherapy Board of New Zealand 2023). These include the ability to plan and implement culturally safe and client-centred physiotherapy assessment and management (Physiotherapy Board of Australia and Physiotherapy Board of New Zealand 2023).

Cultural safety education is essential in preparing health professionals to provide equitable care, particularly for First Nations populations. Internationally, cultural safety has been integrated into health education curricula in countries such as New Zealand, the United States of America and Canada, with frameworks emphasising reflexivity, power dynamics and systemic change (Kurtz et al. 2018; Curtis et al. 2019). In Australia, cultural safety education has progressively been embedded in health professional training, guided by national accreditation standards and First Nations-led initiatives. *The Aboriginal and Torres Strait Islander Health Curriculum Framework* was developed to support pre-professional healthcare training programs to implement First Nations Australian curricula (Department of Health 2014). A recent scoping review by Godwin et al. (2023) aimed to describe the methods and processes of First Nations health curricula development across nursing, medical, dentistry and allied health across international peer-reviewed journals. Godwin et al. (2023) highlight the importance of pre-professional training programs, advocating for the inclusion of First Nations-led development and co-leadership approaches in designing curricula to align with best practice frameworks. In the context of physiotherapy, of 104 studies included in the review, one study specifically pertained to physiotherapy, highlighting that there is little known about training at the pre-professional level to support entry-level students and early-career physiotherapists to provide culturally safe care (Bolton and Andrews 2018; Godwin

et al. 2023). Nelson et al. (2023) conducted a qualitative study exploring the perceptions of new graduate physiotherapists who worked with First Nations Australians within their first two years of practice regarding their preparedness and training needs for working within this context. New graduate physiotherapists subsequently highlighted possible gaps within their pre-professional training regarding First Nations Australian care, such as limited immersive learning opportunities within First Nations Australian communities, minimal opportunities for reflection on practice, and over-reliance on didactic teaching methods in the curricula to teach First Nations content (Nelson et al. 2023). These results suggest that there may be opportunities to enhance and optimise the design and implementation of cultural safety learning in entry-level physiotherapy programs in Australia; however, there is a notable paucity of literature providing evidence of specific learning strategies in this key area of practice.

The University of Queensland responded to some of these challenges by designing and implementing an online learning module series titled *Cultural Safety in Practice*, which employed a pedagogical framework of transformative learning (Mezirow 1997) and included reflection to prepare allied health students (including physiotherapists) for engaging in culturally safe practice with First Nations Australians. The design of the module series was aimed to allow physiotherapy students to engage in reflective practice and gain 'integral' knowledge prior to work-integrated learning and subsequent graduation.

This study aimed to explore the impact of this online module series on physiotherapy students' cultural capabilities and preparedness to provide culturally safe care and effective physiotherapy care for First Nations Australians. This study also added an





opportunity to understand physiotherapy students' experiences of engaging with an online learning module series prior to entering the healthcare workforce as physiotherapy graduates.

Methods

Study design

This study utilised a mixed methods design, featuring a quasi-experimental pre- and post-test evaluation of self-report survey data and a qualitative reflexive thematic analysis of focus group data. Ethical approval was provided by The University of Queensland Human Research Ethics Committee, Project Number: 2023/HE000984.

The lead author (CN), a First Nations Australian physiotherapist and academic with clinical experience working within First Nations Australian health settings, conceptualised the research project design utilising a First Nations methodological approach. First Nations methodology involves undertaking research and practices from a First Nations worldview, encompassing the perspectives, beliefs and values through lived experiences as the central axis (Walter and Suina 2019). The additional research team members included two physiotherapy academics who have extensive experience with qualitative research and identify as a Tangata Tiriti New Zealander (RF) and Caucasian Australian (AM). The authors approached this research with an understanding of the perspectives brought by the lead author (CN), which includes a First Nations Australian lens, and those of the other team members. By acknowledging their own positions, they fostered reciprocal and critically reflexive practice as a research team.

Participants

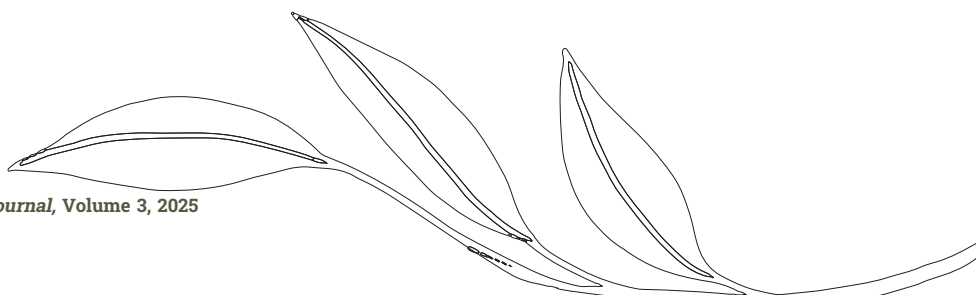
The participants of this study were third-year undergraduate Bachelor of Physiotherapy students and first-year graduate entry Master of

Physiotherapy Studies students at The University of Queensland. The module series was completed by participants in 2023 before commencing work-integrated placements within the following calendar year (Figures 1 and 2). The online module series formed part of the wider course requirements of a semester-long (13 weeks) subject that all students within the cohort were enrolled in titled *Health Promotion, Participation and Preparation for Physiotherapy Practice*. The unit focused on introducing students to aspects of clinical practice and developing knowledge to support the transition to work-integrated placements.

Design of the module series

The original conception and development of the material in the module series was created in collaboration with First Nations Australians, non-First Nations Australians and other stakeholders of The University of Queensland. This included a wide range of individuals, such as researchers, academics, clinical educators, health practitioners and students from the Faculty of Health and Behavioural Sciences. Several organisations were also involved in the initial design process, including The University of Queensland Poche Centre for Indigenous Health, the School of Public Health, the Faculty of Medicine and the Institute for Urban Indigenous Health.

The module series underwent significant review during 2021–22. This was conducted by the Health and Behavioural Sciences Indigenising Curriculum Working Party of The University of Queensland, which consisted of First Nations and non-First Nations students, health practitioners and academics. The Working Party reviewed the module series over 12 monthly meetings and updated the content and delivery methods with the aim of improving the relevancy for allied health students. The updates are summarised below in Figure 3.



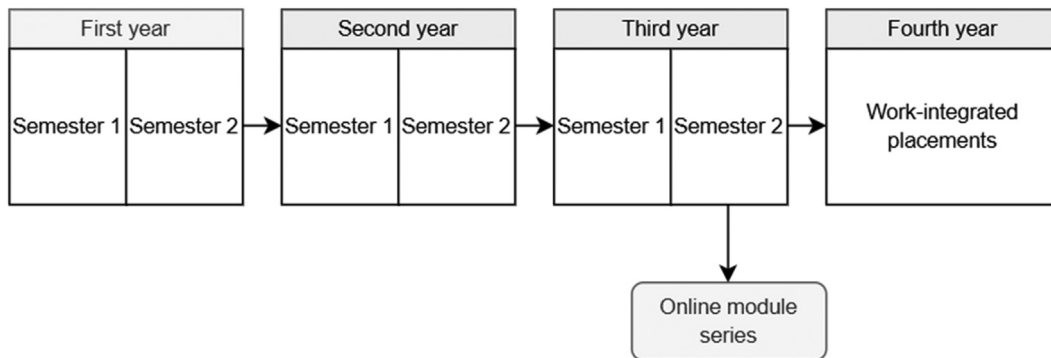


Figure 1: Undergraduate intervention timing.

Summary of the module series

The module series was designed to embed Indigenous knowledges in the training and professional development of health professionals in a culturally safe, transformative online learning environment to improve health outcomes, cultural safety and wellbeing among First Nations Australians (Bullen and Roberts 2019a; Mezirow 1997). The module series comprised four sections in total; however, participants in this study completed two sections titled *Cultural Safety in Health and Community Services* and *Reflection on Professional Practice*. The two sections comprised a total of 60

minutes of online learning content, divided evenly across the two sections, delivered through an online learning platform utilised by The University of Queensland called UQ Extend (The University of Queensland n.d.). UQ Extend is a platform designed to support educators in developing coursework that promotes interactive learning experiences and structured learning sequences, such as situated problems, video content and discussion questions that aim to promote deeper understanding.

The transformative learning theory (Mezirow 1997) was foundational to the design and structure of the online

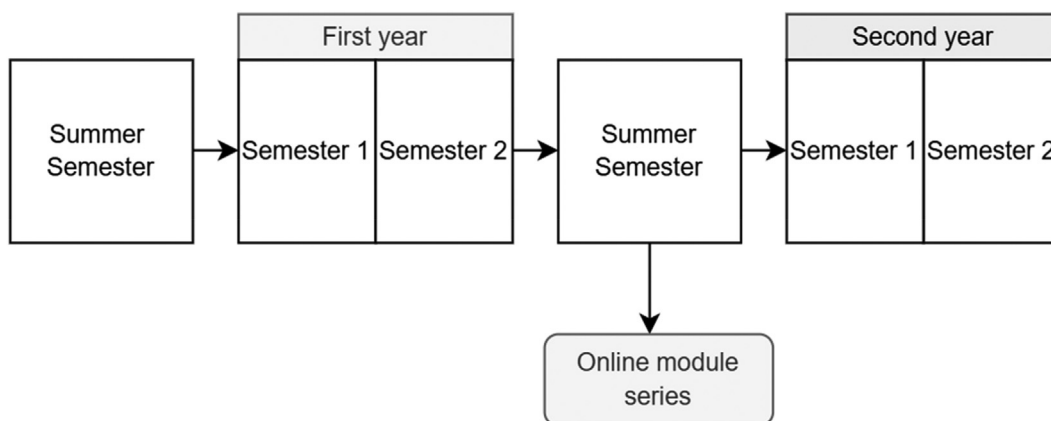


Figure 2: Graduate entry masters intervention timing.



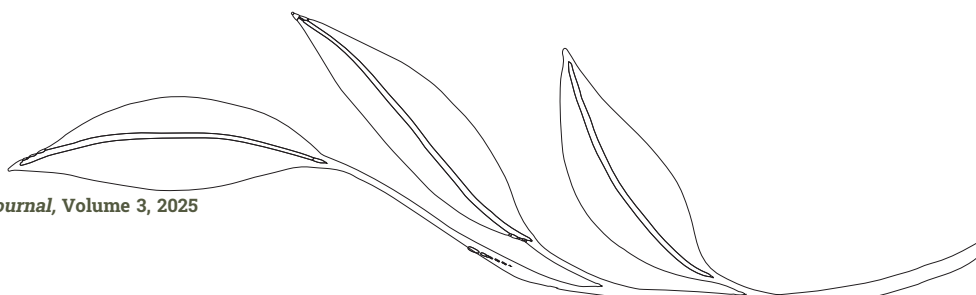


Summary of module updates
<ul style="list-style-type: none"> - Terminology was updated to align with the contemporary understanding of culturally safe practice. - Content was updated to reflect evidence-based cultural safety literature and advances in this domain of practice. - Content was significantly amended to provide local context for students (within the borders of the Queensland state region, which delineates the Queensland healthcare service). - The module delivery platform was transferred to the University of Queensland’s online learning platform, UQ Extend (The University of Queensland n.d.), to capitalise on the learning modalities available (such as video, response to stimulus activities, content animation) and best integrate with the learning management system used. - Content was modified to present material through a strengths-based lens (an update from previous deficit-based material). - Case-based learning content was developed, with the inclusion of written responses to stimulus reflection activities for learners. - Audiovisual material was reviewed for consistency and relevance and was not amended.

Figure 3: Summary of the 2021–22 module series updates.

learning module content. The key premise of this theory is the implementation of strategic cognitive stimuli, which function to challenge a learner’s existing biases and assumptions, particularly their conceptualisation of cultural safety and its application to physiotherapy clinical practice (Mezirow 1997). In the online module series that was evaluated, these stimuli were presented in the form of case study material. The online format offered unique advantages for presenting these cognitive stimuli through multimedia approaches, which included: video testimonials discussing cultural safety from the perspective of First Nations Australians; interactive response-to-stimulus questions about the learner’s understanding of cultural safety principles; and immersive written clinical case study material to situate their cultural safety learning in clinical contexts.

The content within the module series required participants to independently work through several topics presented in written, pictographic and video formats. Additionally, participants were prompted to complete written reflective activities throughout the module series that explored their current attitudes, skills and knowledge; established personal goals; and identified opportunities to progress and apply their learning. Topics were outlined in a navigation pane, where participants were able to see an overview of the topics covered within the module section as well as their completion progress. Participants were recommended to complete the content in the order it was provided; however, the learning platform does not enforce this. An overview of the learning objectives, topics and learning objectives covered within the module series is outlined in [Table 1](#).



Section One: Cultural safety in health and community services

Learning objectives	<ol style="list-style-type: none"> 1. Identify, acknowledge and analyse one's own beliefs, values and attitudes and reflect on how they may influence your work with Aboriginal and Torres Strait Islander peoples 2. Critique the difference between deficit and strengths-based approaches to communication and health and community services, and understand their implications for Aboriginal and Torres Strait Islander peoples 3. Identify key terms and definitions in the context of delivering culturally safe health and community services to Aboriginal and Torres Strait Islander clients/patients/women 4. Describe respectful and appropriate approaches to delivering culturally safe healthcare or community services 5. Identify ways of addressing inequity in health and community services among Aboriginal and Torres Strait Islander peoples 6. With respect to your identity, reflect on your journey as a future health and community services provider through an awareness of cultural safety
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Topics and associated learning activities	<p>Cultural safety</p> <ul style="list-style-type: none"> - Written case study on Aboriginal and Torres Strait Islander views of cultural safety <p>Strengths-based practice</p> <ul style="list-style-type: none"> - Two videos demonstrating strengths-based approaches in Aboriginal and Torres Strait Islander healthcare <ul style="list-style-type: none"> - Video 1: Encouraging Aboriginal fathers to support their partners in breastfeeding (duration 6 minutes, 21 seconds) - Video 2: Strengths-based approach to lung health (duration 1 minute, 38 seconds) <p>Becoming a culturally safe health practitioner</p> <ul style="list-style-type: none"> - Prompting reflective questions on own cultural identity - Interactive learning task with reflective questions using the Cultural Safety Continuum - Video content from an occupational therapist and occupational therapy student on building relationships with Aboriginal and Torres Strait Islander peoples (duration 4 minutes, 29 seconds) <p>Culturally safe health and community services</p> <ul style="list-style-type: none"> - Two written case studies describing culturally safe health and community services in Queensland <p>Journey to cultural safety</p> <ul style="list-style-type: none"> - Prompt to review and reflect on discipline specific professional standards in relation to cultural safety - External links to formal training options for participants to continue cultural safety learning journey
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Section Two: Reflection on professional practice

Learning objectives	<ol style="list-style-type: none"> 1. Identify, acknowledge and analyse one's own cultural values and reflect on their implications for healthcare 2. Reflect on professional experience working in an Aboriginal and Torres Strait Islander health setting 3. Apply problem-solving skills in analysing case studies relating to Aboriginal and Torres Strait Islander health
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Topics and associated learning activities	<p>Four individual case studies involving First Nations Australian peoples as healthcare recipients using written and video content. These included reflective questions regarding:</p> <ul style="list-style-type: none"> - Professional practice - Impact of colonisation and systemic racism - Personal beliefs and biases <p>Case study 1: 26-year-old Aboriginal man with end-stage renal disease requiring dialysis three times a week. The case study followed his journey through seven years of waiting for a kidney transplant. Video content included the day the man was discharged from the hospital following his transplant (duration 1 minute, 5 seconds).</p> <p>Case study 2: 22-year-old Aboriginal woman who engaged in semi-professional rugby league. The case study followed the woman's journey following two torn anterior cruciate ligaments and subsequent impact on her mental health. Her rehabilitation process and return to the sport were followed (no video content included).</p> <p>Case study 3: 58-year-old Aboriginal woman with a history of diabetes, peripheral neuropathy, fibromyalgia, two heart attacks and a stroke. Video content included the woman discussing the impact of her chronic disease on her lifestyle and showed her engagement in a physical exercise program with an Aboriginal community-controlled health organisation (duration 3 minutes, 1 second).</p> <p>Case study 4: 26-year-old Aboriginal woman who experienced racism and bullying at school and in the workplace, then went on to advocate for an Indigenous coordinator role within her workplace, to which she was appointed. Video content included the woman talking about what cultural safety in the workplace should look like (duration 1 minute, 7 seconds).</p>
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Table 1: Learning objectives and learning activities of the online module series



Outcome measures and data collection Survey

Prior to commencing the module series, eligible physiotherapy students were invited to participate in the study and provided with a basic demographic information survey. Participants were prompted to create a unique code to ensure that pre- and post-data could be matched whilst maintaining anonymity. Alongside the demographic information, participants were asked to complete the Cultural Capability Measurement Tool (CCMT), prior to and upon completion of the online module series. The CCMT is a validated tool that measures change in health professional students' cultural capability (West et al. 2017; West et al. 2018). The tool asks participants to rate their self-perceived cultural capability across 22 items on a five-point Likert scale, with nine items utilising a rating of one (strongly disagree) to five (strongly agree), and 13 items listed in reverse rating order of five (strongly disagree) to one (strongly agree). Students completed the tool one week prior to undertaking the online module series and repeated the survey in the four weeks following completion.

The authors wish to acknowledge the renaming and refinements made to the CCMT in 2021 by West et al. (2021). The tool has now been renamed the *Ganngaleh nga Yagaleh (GY) tool*, which acknowledges the Yugembeh words gifted to the research team, which mean education and training.

Focus groups

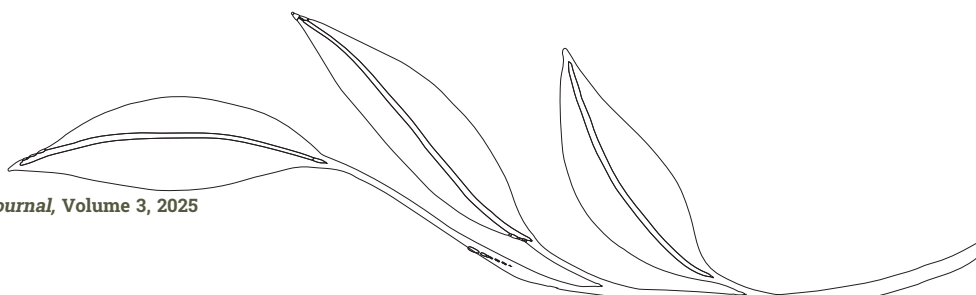
Participants who completed the module series and pre- and post-survey were invited to provide further consent to participate in qualitative focus groups conducted by the lead researcher (CN) via teleconference. Recruitment of participants for the focus groups was concluded when it was deemed that sufficient richness of data was collected according to

the concept of 'information power' (Malterud et al. 2016). The focus group questions were developed by the research team and designed to explore the participant's perceptions of the module series and their perceived preparedness (having the necessary knowledge, skills, confidence, behaviours and attitudes) and cultural capability to work with First Nations Australians in a healthcare setting following the intervention (Bullen and Roberts 2019b; Murray et al. 2023). The lead researcher (CN) transcribed the focus groups verbatim, and recordings and transcriptions were reviewed for accuracy by another member of the research team (RF). A sample of the focus group interview questions is displayed in Table 2.

Data analysis

Quantitative data were analysed using descriptive statistics. Analysis was performed using statistical software (SPSS v. 28, IBM, Armonk, NY, USA) with a significance level set to $P = .05$. Non-parametric analysis was chosen to analyse the data from the CCMT, as the Likert scale data were treated as ordinal. Wilcoxon Signed-Rank tests were used to evaluate differences in pre- and post-scores. Mann-Whitney U tests were used to evaluate differences between overall pre- and post-total CCMT scores of domestic and international students. Data are presented as means and standard deviations.

For the qualitative data collected from the focus groups, the lead researcher (CN), alongside the research team, conducted the reflexive thematic analysis as an ongoing process to analyse transcripts of recorded audio data (Barrett et al. 2020; Braun and Clark 2019). To promote reflexivity, the research team met regularly to share their findings and reflections and discuss developing themes. This process was completed until the research team determined that no new themes were arising from the data. The lead



Interview questions

How did the module either assist or hinder your preparation to work with First Nations Australians?
 Could you explain the key elements of the modules that you believe made this preparation adequate?
 Could you explain the key elements that were lacking that hindered your preparation?

Table 2: Sample of focus group interview questions

researcher (CN) refined and organised the final themes and presented them to the research team for review to minimise the influence of potential biases from the lead researcher's position as a First Nations Australian.

Results**Pre- and post-module series surveys**

A total of 166 students were eligible through their course enrolment to participate in the survey. A total of 98 students (response rate 59.0%) participated in the survey prior to completion of the module series and 52 students (response rate 31.3%) also participated in the survey upon completion of the module series and were thus included in analysis. Detailed participant demographic data are outlined in [Table 3](#).

There was a significant increase in total CCMT scores from pre-module series completion (mean, 89.73) to post-module series completion (mean, 91.69) ($P > .05$). Statistically significant differences were also found between individual items in the pre-module series completion and post-module series completion; these were items 5, 18, 19, 20 and 22 ($P > .05$) ([Table 4](#)). There were no significant differences between domestic and international students' pre and post total CCMT scores.

Focus groups

Four focus groups were completed: two with three participants and two with two participants (total $n = 10$). The demographic data for the focus group participants are outlined in [Table 5](#). The focus group

durations were 54, 60, 45 and 29 minutes, respectively. Twelve codes were generated and formed into three themes ([Table 6](#)).

Theme 1. Establishing a fundamental understanding of cultural safety in preparation for placement

Participants described the module series content as supporting a foundational knowledge pertaining to First Nations Australian culture and cultural safety, providing an equitable opportunity for all students, irrespective of whether they were domestic or international, to obtain baseline knowledge prior to commencing placement. Some domestic students commented that the module series reinforced concepts that they were already familiar with, such as taking a strengths-based approach, whilst others

Demographic variable	Participants
Age – years	
18–24	37 (71.1)
25–34	12 (23.1)
35–44	2 (3.9)
45–54	1 (1.9)
Gender	
Male	19 (36.5)
Female	33 (63.5)
Prefer not to say	0 (0)
Description of enrolment	
Domestic (combined)	24 (46.2)
Bachelor of Physiotherapy	18 (75)
Master of Physiotherapy Studies	6 (25)
International (combined)	28 (53.8)
Bachelor of Physiotherapy	13 (46.4)
Masters of Physiotherapy Studies	15 (53.6)
Physiotherapy program	
Bachelor of Physiotherapy	24 (46.2)
Master of Physiotherapy Studies	28 (53.8)
Data are shown as n (%)	

Table 3: Participant demographic data



Item	Pre-module series	Post-module series	P-value
1* – History does not impact First Peoples’ health	4.08 (1.19)	4.42 (0.82)	.06
2 – Understanding First Peoples’ history will inform my practice as a health professional	4.46 (0.61)	4.56 (0.50)	.17
3 – Understanding First Peoples’ cultural values will influence how I practice	4.48 (0.58)	4.58 (0.54)	.23
4* – Understanding First Peoples’ social practices will not apply to my practice	4.35 (0.84)	4.42 (0.80)	.38
5 – To improve First Peoples’ health, Indigenous cultures need to be visible in clinical and community health settings	4.04 (0.93)	4.37 (0.79)	.01**
6 – There may be few exceptions but in general First Peoples are all the same	1.85 (0.75)	1.81 (0.93)	.54
7* – I find it difficult to understand the beliefs of different cultural groups	3.67 (0.98)	3.83 (0.98)	.17
8 – I feel comfortable working with people from other cultures	4.33 (0.79)	4.35 (0.74)	.83
9* – Reflecting on my own cultural values will not help me become culturally aware	4.27 (0.84)	4.48 (0.67)	.14
10 – Acknowledging that cultural differences exist is the first step to becoming culturally capable	4.56 (0.57)	4.54 (0.58)	.84
11 – Comprehensive primary healthcare services are fundamental to improving First Peoples’ health	4.52 (0.58)	4.52 (0.58)	1.00
12* – Improving First Peoples’ health is not the responsibility of all health professionals	4.31 (0.85)	4.48 (0.67)	.21
13 – Evidence from research can help me in my practice in First Peoples’ health	4.35 (0.76)	4.29 (0.70)	.49
14* – It is not my responsibility to challenge the way things are done in health practice	4.31 (0.73)	4.35 (0.65)	.69
15* – My relationship with First Peoples will not impact clinical outcomes	4.02 (0.98)	4.27 (0.82)	.07
16 – I believe a holistic approach to First Peoples’ health is important	4.46 (0.58)	4.64 (0.53)	.06
17* – All First Peoples are treated equally by health professionals	3.85 (1.09)	3.90 (0.80)	.90
18* – First Peoples receive special treatment from government	3.14 (0.93)	3.39 (1.05)	.05**
19* – First Peoples have the same level access to health services as all other Australians	3.89 (0.86)	4.27 (0.69)	.00**
20* – I will find it difficult to advocate for improvements in First Peoples’ health	3.37 (0.89)	3.65 (0.99)	.03**
21* – It is difficult for me to be culturally inclusive towards First Peoples	4.12 (0.88)	4.19 (0.74)	.43
22* – I do not have a social responsibility to work for changes in First Peoples’ health	4.21 (0.67)	4.40 (0.75)	.05**
CCMT total scores	89.73 (8.47)	91.69 (9.36)	.04**

Data are shown as mean (SD). *Reverse-coded items: strongly agree = 1, agree = 2, neither agree nor disagree = 3, disagree = 4, strongly disagree = 5.
**Significant score where $P < .05$.

Table 4: Participant responses to Cultural Capability Measurement Tool (CCMT) items at pre- and post-module series completion

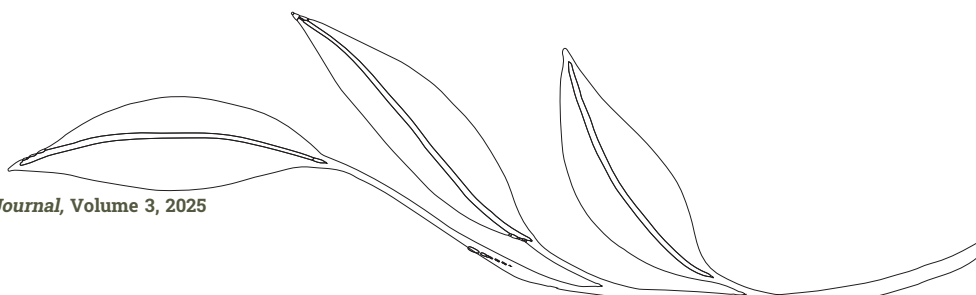
discussed the benefit of reviewing the content prior to work-integrated placements:

It is something that we’ve already been taught before, it reinforced what we already knew (P2 FG1).

The strengths-based model is a great foundation that you can take into consideration as it’s about collaborating with clients, so that’s definitely something from the modules that was helpful (P1 FG3).

Participant	Age – years	Gender	Domestic or international	Program
P1 FG1	18–24	Female	Domestic	Bachelor of Physiotherapy
P2 FG1	18–24	Female	Domestic	Bachelor of Physiotherapy
P3 FG1	45–54	Female	Domestic	Bachelor of Physiotherapy
P1 FG2	18–24	Male	Domestic	Bachelor of Physiotherapy
P2 FG2	18–24	Female	International	Bachelor of Physiotherapy
P1 FG3	18–24	Male	Domestic	Bachelor of Physiotherapy
P2 FG3	18–24	Female	Domestic	Bachelor of Physiotherapy
P3 FG3	18–24	Female	International	Bachelor of Physiotherapy
P1 FG4	25–34	Female	Domestic	Master of Physiotherapy Studies
P2 FG4	18–24	Female	International	Master of Physiotherapy Studies

Table 5: Focus group participant demographic data





Codes	Theme
<ul style="list-style-type: none"> - Foundational knowledge, theories and models - Equitable opportunity to obtain baseline knowledge - Resources to refer to on placement or in practice - Content of case studies - Completion at own pace - Benefits of case studies and videos - Unbiased content - Format of learning supporting success - Seeking reflective practice with peers - Hands on profession - Reflection in safe space - Seeking feedback and opportunity to ask questions 	<p>Establishing a fundamental understanding of cultural safety in preparation for placement</p> <p>Online learning supports self-reflection</p> <p>Seeking person-to-person reflection and experiences</p>

Table 6: Codes and generated themes

Conversely, international students who had limited exposure to First Nations Australian culture found the module series to be an effective introduction to the concept of cultural safety in this specific population:

The modules were a really great way to introduce everyone to the concept, because we have a large international cohort, it is really beneficial to begin learning about cultural safety and it gave us a great background knowledge to make sure that we are practicing in a culturally safe way (P2 FG4, international student).

Participants explained that the module series was a crucial tool for cultivating cultural safety and awareness, enabling them to recognise and respect cultural differences prior to commencing work-integrated learning placements.

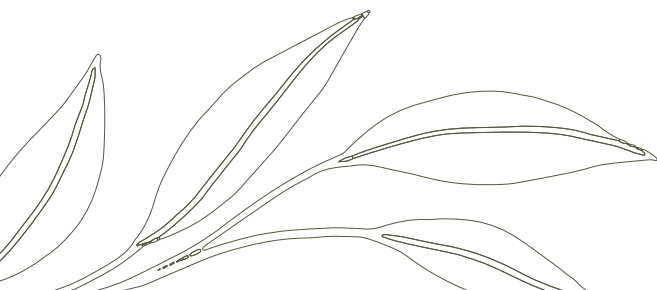
It gives us awareness that these cultural differences do exist and it's preparing ourselves to be a lot more culturally sensitive and not just make assumptions of the clients that we come in contact with, I think that's beneficial for us before we start our placements and before we start seeing patients (P3 FG3).

Participants also emphasised the practical value of their experiences during the learning intervention, indicating that the module series may support them to continue their cultural safety learning journey during practical placement and beyond into professional practice.

These modules have been super helpful and taught me about the concept of cultural reflexivity and continually putting that in practice as we engage with patients on placement or professional practice and trying to continue learning and make it a cycle in a process rather than just assuming that I know everything (P2 FG4).

I actually did save it in my tabs as well, because I did think that it would be a helpful resource for me as I'm not someone who has been very exposed to the culture a lot. This is still something that is quite unfamiliar to me, so I did find that a lot of the hyperlinks were quite useful to refer back to (P2 FG2).

There were lists of formal training on there as well, which I thought that would either be useful later on or now, so I just saved it all so that in case I wanted to look back on it during placements so it's something I can access easily (P1 FG2).





Theme 2. Online learning supports self-reflection

Participants discussed that the online learning platform and content helped them feel more prepared for placement, as it supported their reflection into their physiotherapy practice and how they may approach working alongside First Nations Australians in a healthcare setting in future. Participants particularly discussed engaging with the case study content that was derived from real-life examples of First Nations Australians' experiences, highlighting that this facilitated reflection into their own practice:

Listening to people's stories and how others impacted them in their life. That to me, makes me think more and how can I put that into what I actually do (P3 FG1).

Looking through the different cases and the diversity of the people that were included helped me to recognise that First Nations people come from very diverse backgrounds, so there's potentially different approaches and practices that would be beneficial to take with different people, so it helped to keep that in mind as we go through placement (P2 FG4).

Participants in the focus groups highlighted the advantages inherent in the self-paced structure, noting that it afforded them the opportunity for reflection at their own pace and offered flexibility for completion, mitigating the constraints of time pressure often associated with other learning modalities, such as a lecture format. Some participants highlighted that not all students would engage with the content at this level:

It is so self-paced and you do it in your own time, some people I am sure would have done it quickly but then I really took my time and engaged with the material (P1 FG3).

With all our extra study and all the extra lectures, you can always go back to the modules and if there is a part where you don't understand it, you can actually reflect on it again (P3 FG1).

I liked the self-paced approach, it allowed us to complete it when it was a time that was convenient to us, and I think that helped to get the most out of the module and to be able to go through it slowly and go back to that content to really engage with it (P2 FG4).

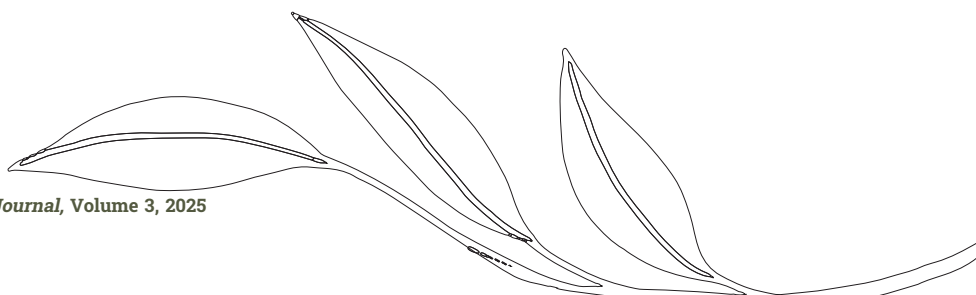
Participants discussed how the online format enabled them to impartially engage with content, free from potential biases that might arise during in-person education settings. This mode of learning facilitated independent reflective examination of both the content and their personal biases:

Learning in this way, rather than in a lecture setting, made sure that everyone was able to equally engage with the content as opposed to a typical class setting where others' opinions and ideas might make you feel peer pressured into thinking a certain way (P2 FG4).

The short video clips on the personal testimonies was really good because I think hearing it and watching a video versus just reading a whole page of information definitely keeps you more engaged (P3 FG3).

Theme 3. Seeking person-to-person reflection and experiences

Participants were able to discuss and suggest areas for additional learning opportunities to enhance their perceived cultural safety capabilities in preparation for practice. Participants highlighted that the module series provided them with foundational theoretical knowledge but identified that because physiotherapy is a very 'hands on' (P2 FG2) profession, they would seek out additional opportunities that would provide





them the opportunity to further engage with cultural safety learning in a practical manner:

More exposure would be useful, like to have a conversation with a First Nations person or the opportunity to treat someone as a patient, just that interaction itself would be valuable and useful... physio students really enjoy hands on things like practicals and listening to experiences like that person-to-person aspect (P1 FG2).

As an international student who is less familiar with Australia, having exposure such as a community visit that integrated the content into the curriculum would be really beneficial as we would get to see it first hand as well as experience it rather than just hear it through an online module (P3 FG3).

Participants highlighted the value they would receive from engaging with other physiotherapists who had lived experience in working in First Nations Australian healthcare settings. Participants articulated that they would benefit from the opportunity to ask questions and understand their perspectives to prepare themselves for placement and future practice:

It would be helpful talking to somebody who has worked within the Indigenous community for a long time. The modules mention a part of cultural safety is understanding new culture, but also understanding how your own culture and upbringing affects how you see others (P2 FG1).

It would be really valuable if there could be more contact with practitioners and patients or clients from Aboriginal and Torres Strait Islander healthcare centres because I think that those are the people who have the most practical, the most relevant experience for how to actually produce culturally safe practice (P2 FG3).

Participants also discussed having the opportunity to reflect alongside their peers following the completion of the series. Some participants highlighted that it would be beneficial to 'hear the different perspectives in person' (P2 FG4) and engage in conversation around the content:

A tutorial that was associated with the modules where you can come in and then have peer discussions around a case study to reflect would be helpful so that you could have some of those conversations, as some people might have questions but they're not sure how or who to ask (P1 FG3).

Other participants highlighted that they would benefit from the opportunity to ask questions in a 'very non-judgemental' (P2 FG2) setting to reduce feelings of fear or apprehension related to unintentional miscommunication or misinterpretation when communicating with diverse individuals. Participants suggested that an anonymous 'question and answer' forum – either asynchronous (e.g. an online forum) or synchronous (e.g. face-to-face presentation) may provide this 'safe space' (P2 FG2) to learn:

A discussion board would be helpful, where you can ask a question anonymously and then get a reply back, so that we can think about it and ponder on it to support our decision making (P1 FG2).

Discussion

Given the important role that physiotherapists play in First Nations Australian healthcare, preparing student physiotherapists to practice culturally safe care is an important consideration for the broader physiotherapy profession. This study is the first paper known to the authors to explore pre-professional teaching interventions to support physiotherapy students learning about cultural safety in the context of First





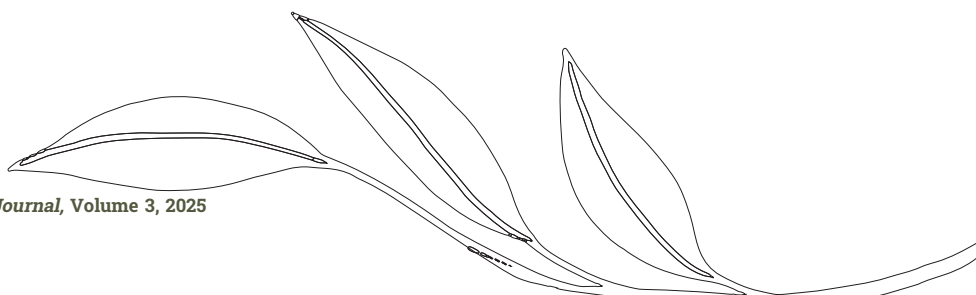
Nations Australians. This study also provided a key opportunity to understand physiotherapy students' experiences of engaging with an online learning module series before entering the healthcare workforce as physiotherapy graduates.

This study explored the impact and student experience of an online learning module series on teaching cultural safety to physiotherapy students at The University of Queensland. The results indicated a significant improvement in students' self-reported cultural capabilities using the CCMT, with five of the 22 individual items yielding a significant improvement following module completion. The findings from the survey highlighted specific areas within the CCMT that may have been most influenced by the content within the online learning module series.

Item 18 'First Peoples receive special treatment from the government' yielded a significant decrease in scores following completion of the series ($P = .05$). The results indicate that students' beliefs regarding First Nations Australians receiving special treatment from the government reduced following the intervention, indicating an improvement in attitudes. Furthermore, Item 19 'First Peoples have the same level access to health services as all other Australians' also yielded a significant decrease in score ($P = .00$), indicating that students' understanding of First Nations Australians' access to health services, compared with all other Australians, improved. This may be linked to learning materials in the series providing students with an opportunity to review case studies on the experiences of First Nations Australians receiving healthcare and subsequently reflect on the treatment received. Item 20 'I will find it difficult to advocate for improvements in First Peoples health' had a significant improvement in scores ($P = .03$). The observed outcome may be attributed to a close association between this CCMT

item and the learning objectives developed for the module series, specifically those aimed at addressing inequities in health and community services among First Nations Australians, as well as the emphasis on adopting a strengths-based approach. Content within the series directly outlined the steps that health professionals could take to advocate for and ensure culturally safe and respectful practice along with prompting students to reflect on how they may alter their practice. It is therefore unsurprising that a significant improvement in students' perceived ability to advocate for First Nations Australians was found following the intervention.

When the CCMT scores were reviewed in conjunction with the focus group data, it is possible that the change in scores may have been an artefact of strong representation of 28 international students in the participant sample (53%). There were no statistically significant differences in pre- and post-CCMT scores between international and domestic students; however, international students who self-identified limited understanding of First Nations Australian health discussed in the focus groups that the module series supported those students to develop a foundational knowledge of First Nations Australian healthcare. [Mackay et al. \(2011\)](#) highlighted that international students may find cultural safety education more challenging to engage with, due to their own heritage. This notion is reflected in the work by [Richardson et al. \(2017\)](#), who highlighted the range of backgrounds, experiences, values and beliefs that students have that influence how they engage and learn about cultural safety. Although comparing the experiences and backgrounds of domestic versus international students was not a key focus of this study, it is important to highlight that domestic students were likely to have had exposure to First Nations Australian content to some extent, either





through formal or informal means, prior to participating in this study. The findings may differ in a different university setting with lower numbers of international students.

The use of case studies provided explicit examples to students of the challenges that First Nations Australians face and must subsequently overcome to receive culturally safe healthcare in Australia. The exposure to real-life case examples may have supported a shift in beliefs regarding the experiences of First Nations Australians receiving healthcare support, as case-based learning has been shown to enhance clinical knowledge, improve attitudes and improve patient outcomes in healthcare-related fields (McLean 2016). Isaacson (2014) showed in a study with nursing students that immersion experiences increased students' knowledge of components related to cultural safety, such as power imbalances. Hudson and Maar (2014) also acknowledged the importance of immersive learning experiences to support cultural safety capabilities but stressed the importance of previously learning the theoretical knowledge. This study attempted to address this by ensuring that the learning occurred just prior to students commencing their practical placements. Whilst outcomes from this study suggest that the online module series may act as a step in the right direction in providing students with theoretical cultural safety knowledge, this theoretical knowledge should ideally be accompanied with immersive experiences to translate theory into real-world practice.

Despite the recommendations contained in this paper for increased access to cultural safety learning and optimisation of the educational strategies involved, it is important to acknowledge the potential cultural load placed on First Nations Australians and their communities to contribute to the training and

education of health professionals, including physiotherapists. Given the volume of physiotherapy students and the scarce number of placements available to health students in First Nations Australian healthcare settings, it is not viable for pre-professional training providers to rely on immersive learning opportunities alone to prepare pre-professional physiotherapists to work with First Nations Australians (Power et al. 2020; Whitford et al. 2013). Practical placements in First Nations Australian healthcare settings should be viewed as a 'privilege and not as a right' (Whitford et al. 2013, p. 340), and this research encourages pre-professional training providers to consider how they provide physiotherapy students with sustainable immersive learning opportunities regarding First Nations Australians.

The focus group findings highlighted the importance of self-reflection when learning about cultural safety and the desire to have work-integrated learning experiences or experts within their field to further explore the topic to enhance their learning experience. The module series had one specific reflective activity utilising the Cultural Safety Continuum Reflective Tool (Victoria State Government – Department of Health 2019), which aimed to support the students' ability to describe their current attitudes, skills and knowledge, establish personal goals and identify opportunities to progress and apply their learning. The series also contained two additional reflective activities in section one and reflective activities for each of the four individual case studies in section two. These reflective activities, particularly the activity utilising the Cultural Safety Continuum, may have contributed to the students expressing their need for further exposure and experiences to apply their learning.

The concept of cultural safety necessitates physiotherapists to continuously self-reflect beyond





the pre-professional level (Curtis et al. 2019). Although pre-professional training programs are guided by the Physiotherapy practice thresholds to develop and prepare physiotherapists (Physiotherapy Board of Australia & Physiotherapy Board of New Zealand 2023), it must be acknowledged that there is little published literature regarding effective learning approaches to cultural safety in entry-level physiotherapy. The results from this paper may support prioritising curricula design that promotes self-reflection in relation to cultural safety, which has been explored in other health professions, such as nursing (Hall et al. 2023; Mattingly 2021). However, it is likely that further research evaluating the efficacy and best-practice implementation of self-reflection is sorely needed to deepen understanding in this area.

Limitations

Despite significant overall changes in the CCMT survey scores, several items in the survey do not align with the module series learning objectives and content, meaning that the improvements in scores may not be solely attributable to the learning module series. Additionally, the CCMT was not specifically designed for physiotherapy, which may limit its relevance to this field. Furthermore, although the survey results indicate a significant change in CCMT scores following completion of the modules, it is important to acknowledge the difference between significant and meaningful change. A significant difference in the data does not always equate to meaningful change, especially in the domain of healthcare (Middel and van Sonderen 2002). Thus, the data should be interpreted with caution and be accompanied by the qualitative data from the focus groups for further context.

An area for consideration for future studies would be to collect data from participants following completion of a practical placement. As this was not an aim of the

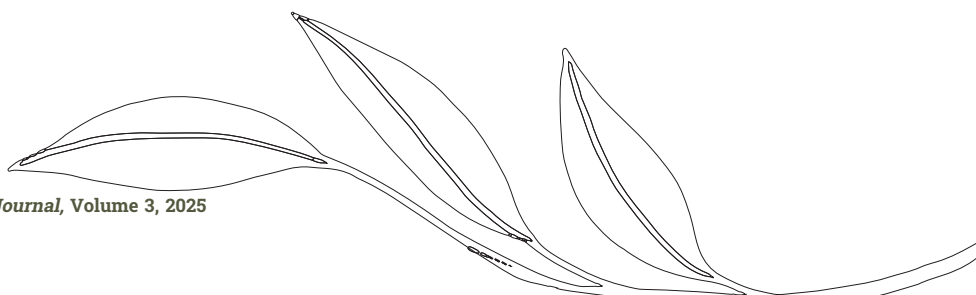
current study, it is unknown how participants perceived their own cultural safety capabilities following potential exposure to First Nations Australians in a practical setting, thus it is difficult to ascertain whether the learning content supported a meaningful change.

Although the participant sample size for the focus groups was smaller in number when compared with the quantitative data pool, this is not considered to be a limitation of the data quality, as the richness of focus group data that were collected was deemed to satisfy the criteria for 'information power' (Malterud et al. 2016) with consideration for the research aims and resource limits (Braun and Clarke 2021; Sim et al. 2018).

The minimal improvement observed in 17 of the CCMT items may have been a consequence of the high baseline scores, where many students may have had high self-perceived cultural capability across these items from prior knowledge or study. This suggests potential limitations in the CCMT, where the learning modules may have enhanced students' beliefs, but the low ceiling effect may have prevented improvements in these items from being captured.

Conclusion

This study aimed to evaluate the effect of a First Nations Australian cultural safety online learning module series in preparing physiotherapy students for practice. The results of this study suggest that an online learning module series may be an effective teaching tool for preparing physiotherapy students with foundational knowledge regarding cultural safety, in the context of First Nations Australians, prior to completing practical placements. The results indicate that students' self-reported cultural capabilities, as measured by the CCMT, improved following the completion of an online learning module series.





Furthermore, focus group outcomes indicate that the module content and format supported their self-reflection. Further research should consider the impact of coupling synchronous learning opportunities following online learning interventions, such as providing students with an opportunity to reflect in small groups in a practical setting to support their cultural safety journey.

Author contributions

C. Nelson - Conceptualisation, study design, ethics application, intervention coordination, primary data processing, manuscript writing, final manuscript review. A. Mandrusiak - ethics application, study design, data analysis and interpretation, manuscript revisions, final manuscript review. R. Forbes - ethics application, study design, data analysis and interpretation, manuscript revisions, final manuscript review.

Declaration of interests

None.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Acknowledgments

The authors would like to acknowledge the hard work of all the stakeholders who contributed to the development of the module series over the years, and to those who have committed to continuing to review the content into the future to ensure it reflects the needs of First Nations Australians.

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Allison Mandrusiak is a Caucasian Australian from Brisbane, Australia. Allison is a teaching-focused academic and physiotherapist at The University of Queensland. Allison's research explores the impacts of experiential learning in preparing students for practice.

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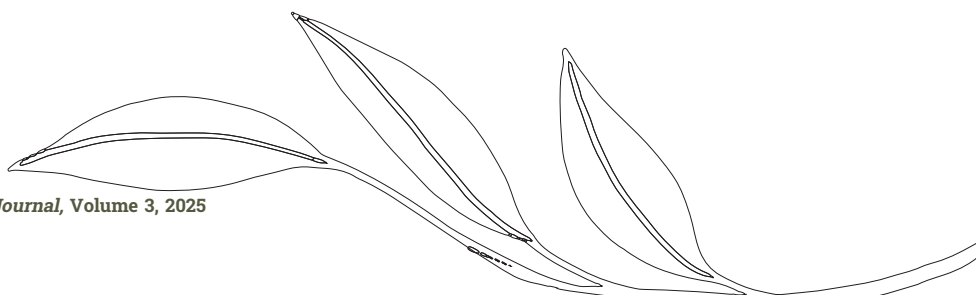
References

- Australian Health Practitioner Regulation Agency, 2023. Aboriginal and Torres Strait Islander Health Strategy. Accessed on 11 June 2024 at: <https://www.ahpra.gov.au/About-Ahpra/Aboriginal-and-Torres-Strait-Islander-Health-Strategy.aspx>.
- Australian Physiotherapy Association, 2024. Cultural safety in physiotherapy. Accessed on 12 May 2024 at: <https://australian.physio/inmotion/cultural-safety-physiotherapy>.
- Australian Physiotherapy Council, n.d. The Council. Accessed on 3 January 2025 at: <https://physiocouncil.com.au/about-us/the-council#:~:text=The%20Australian%20Physiotherapy%20Council%20is,to%20practice%20physiotherapy%20in%20Australia>.
- Barrett, A., Kajamaa, A., Johnston, J., 2020. How to... be reflexive when conducting qualitative research. *Clin Teach* 17 (1), 9–12. <https://doi.org/10.1111/tct.13133>.





- Bolton, J., Andrews, S., 2018. 'I learned more than from any lecture' – Indigenous place and space for teaching Indigenous health to physiotherapy students. *Phys Ther Rev* 23, 35–39. <https://doi.org/10.1080/10833196.2017.1341744>.
- Braun, V., Clarke, V., 2019. Reflecting on reflexive thematic analysis. *Qual Res Sport Exerc Health* 11, 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>.
- Braun, V., Clarke, V., 2021. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qual Res Sport Exerc Health* 13, 201–216. <https://doi.org/10.1080/2159676X.2019.1704846>.
- Bullen, J., Roberts, L., 2019a. Driving transformative learning within Australian Indigenous studies. *Aust J Indig Educ* 48 (1), 12–23. <https://doi.org/10.1017/jie.2017.40>.
- Bullen, J., Roberts, L., 2019b. Transformative learning: a precursor to preparing health science students to work in Indigenous health settings? *Aust J Indig Educ* 48 (2), 129–140. <https://doi.org/10.1017/jie.2018.3>.
- Curtis, E., Jones, R., Tipene-Leach, D., Walker, C., Loring, B., Paine, S.-J., Reid, P., 2019. Why cultural safety rather than cultural competency is required to achieve health equity: a literature review and recommended definition. *Int J Equity Health* 18 (1), 174. <https://doi.org/10.1186/s12939-019-1082-3>.
- Department of Health, 2014. National Aboriginal and Torres Strait Islander Health Curriculum Framework. Australian Government, Canberra, Australia. Accessed on 3 January 2025 at: <https://www.health.gov.au/sites/default/files/documents/2020/12/aboriginal-and-torres-strait-islander-health-curriculum-framework.pdf>.
- Godwin, S., Hyett, N., McMahon, M., McKinstry, C., Long, N., Whiteside, M., Bruce, C., 2023. Methods and processes for First Nations health curriculum development for nursing, medicine, dentistry and allied health entry-level programs: a scoping review. *Sage Open* 13 (2). <https://doi.org/10.1177/21582440231163834>.
- Hall, K., Vervoort, S., Del Fabbro, L., Rowe Minniss, F., Saunders, V., Martin, K., Bialocerkowski, A., Milligan, E., Syron, M., West, R., 2023. Evolving beyond antiracism: reflections on the experience of developing a cultural safety curriculum in a tertiary education setting. *Nurs Inq* 30 (1), e12524. <https://doi.org/10.1111/nin.12524>.
- Hudson, G.L., Marr, M., 2014. Faculty analysis of distributed medical education in Northern Canadian Aboriginal communities. *Rural Remote Health* 14 (4). <https://doi.org/10.22605/RRH2664>.
- Isaacson, M., 2014. Clarifying concepts: cultural humility or competency. *J Prof Nurs* 30 (3), 251–258. <https://doi.org/10.1016/j.profnurs.2013.09.011>.
- Kurtz, D.L.M., Janke, R., Vinek, J., Wells, T., Hutchinson, P., Froste, A., 2018. Health sciences cultural safety education in Australia, Canada, New Zealand, and the United States: a literature review. *Int J Med Educ* 9, 271–285. <https://doi.org/10.5116/ijme.5bc7.21e2>.
- Mackay, B., Harding, T., Jurlina, L., Scobie, N., Khan, R., 2011. Utilising the Hand Model to promote a culturally safe environment for international nursing students. *Nurs Prax Aotearoa N Z* 27 (1), 13–24. <https://doi.org/10.1016/j.nepr.2011.12.004>.
- Malterud, K., Siersma, V.D., Guassora, A.D., 2016. Sample size in qualitative interview studies: guided by information power. *Qual Health Res* 26 (13), 1753–1760. <https://doi.org/10.1177/1049732315617444>.
- Mattingly, J.A., 2021. Fostering cultural safety in nursing education: experiential learning on an American Indian reservation. *Contemp Nurs* 57 (5), 370–378. <https://doi.org/10.1080/10376178.2021.2013124>.
- McLean, S.F., 2016. Case-based learning and its application in medical and health care fields. A review of worldwide literature. *J Med Educ Curr Dev* 3. <https://doi.org/10.4137/JMECD.S20377>.
- Mezirow, J., 1997. *Transformative learning: theory to practice*. *NDACE* 74, 5–12.
- Middel, B., van Sonderen, E., 2002. Statistical significant change versus relevant or important change in (quasi) experimental design: some conceptual and methodological problems in estimating magnitude of intervention-related change in health services research. *Int J Integr Care* 2, e15. <https://doi.org/10.5334/ijic.65>.



- Murry, A.T., Mughal, H., Crowshoe, L., 2023. Readiness to practice in health care: an empirical definition based on a content analysis of the literature. *J Contin Educ Nurs* 54 (7), 302–312.
- Nelson, C., Mandrusiak, A., Forbes, R., 2023. Perceived preparedness and training needs of new graduate physiotherapists' working with First Nations Australians. *Physiother Theory Pract* 21, 1–14. <https://doi.org/10.1080/09593985.2023.2179382>.
- Papps, E., Ramsden, I., 1996. Cultural safety in nursing: the New Zealand experience. *Int J Qual Health Care* 8 (5), 491–497.
- Physiotherapy Board of Australia and Physiotherapy Board of New Zealand, 2023. Physiotherapy practice thresholds in Australia and Aotearoa New Zealand [PDF]. Accessed on 11 June 2024 at: <https://cdn.physiocouncil.com.au/assets/volumes/downloads/Physiotherapy-Board-Physiotherapy-practice-thresholds-in-Australia-and-Aotearoa-New-Zealand.PDF>.
- Power, T., Lucas, C., Hayes, C., Jackson, D., 2020. 'With my heart and eyes open': nursing students' reflections on placements in Australian, urban Aboriginal organisations. *Nurs Educ Pract* 49. <https://doi.org/10.1016/j.nepr.2020.102904>.
- Ramsden, I., 2015. Towards cultural safety. In: *Cultural Safety in Aotearoa New Zealand*, second ed. Cambridge University Press, Melbourne, pp. 5–25.
- Richardson, A., Yarwood, J., Richardson, S., 2017. Expressions of cultural safety in public health nursing practice. *Int Nurs Rev* 24 (1). <https://doi.org/10.1111/nin.12171>.
- Sim, J., Saunders, B., Waterfield, J., Kingstone, T., 2018. The sample size debate: response to Norman Blaikie. *Int J Soc Res Methodol* 21, 643–646. <https://doi.org/10.1080/13645579.2018.1454642>.
- The University of Queensland, n.d. UQ Extend (Original). Accessed on 4 January 2025 at: <https://elearning.uq.edu.au/staff-guides-original/uq-extend-original>.
- Victoria State Government – Department of Health, 2019. Aboriginal and Torres Strait Islander cultural safety framework – Cultural safety continuum reflective tool. Accessed on 11 June 2024 at: <https://www.health.vic.gov.au/publications/aboriginal-and-torres-strait-islander-cultural-safety-framework-part-1>.
- Walter, M., Suina, M., 2019. Indigenous data, Indigenous methodologies and Indigenous data sovereignty. *Int J Soc Res Methodol* 22, 233–243. <https://doi.org/10.1080/13645579.2018.1531228>.
- West, R., Wrigley, S., Mills, K., Taylor, K., Rowland, D., Creedy, D.K., 2017. Development of a First Peoples-led cultural capability measurement tool: a pilot study with midwifery students. *Women Birth* 30 (3), 236–244. <https://doi.org/10.1016/j.wombi.2017.01.004>.
- West, R., Mills, K., Rowland, D., Creedy, D.K., 2018. Validation of the first peoples cultural capability measurement tool with undergraduate health students: a descriptive cohort study. *Nurse Educ Today* 64, 166–171. <https://doi.org/10.1016/j.nedt.2018.02.022>.
- West, R., Armao, J.E., Creedy, D.K., Saunders, V., Rowe Minnis, F., 2021. Measuring effectiveness of cultural safety education in First Peoples health in university and health service settings. *Contemp Nurse* 57 (5), 356–369. <https://doi.org/10.1080/10376178.2022.2025876>.
- Whitford, D., Taylor, J., Thomas, K., 2013. Working in Indigenous health settings. In: Stagnitti, K., Schoo, A., Welch, D. (Eds.), *Clinical and fieldwork placements in the health professions*, second ed. Oxford University Press, Melbourne, Victoria, pp. 329–347.