The Australian Journal of Indigenous Education
Volume 53 | Number 1 | © The Author/s 2024 doi 10.55146/ajie.v53i1.609

Measuring attitude change in nursing students after completion of a First Nations peoples' health unit: Embedding a validated tool in learning and assessment practices

Kylie McCullough[1], Angela Genoni[2], Melanie Murray[1], Darren Garvey[3] and Linda Coventry[1]

[1] School of Nursing and Midwifery, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia 6027

[2] School of Medical and Health Sciences, Edith Cowan University, 270 Joondalup Drive, Joondalup, Western Australia 6027

[3] Kurongkurl Katitjin, Centre for Indigenous Australian Education and Research, Edith Cowan University, 2 Bradford Street, Mount Lawley, Western Australia 6050

The health inequities experienced by Aboriginal and Torres Strait Islander peoples, rooted in the historical and ongoing negative impacts of colonisation and disrupted traditional lifestyles, sees higher rates of illness and hospitalisations, increased morbidity and higher premature death rates than other Australians. Nurses represent the majority of Australia's health workforce and nursing students must have knowledge to provide culturally safe care to Australia's Aboriginal and Torres Strait Islander peoples. An Aboriginal and Torres Strait Islander Peoples' Health and Wellbeing unit was developed and introduced into an undergraduate nursing curriculum. This project aimed to determine the effectiveness of the unit content in changing the attitude of nursing students towards care of First Nations peoples. A quasi-experimental design was used and included all undergraduate nursing students commencing this unit in 2020 at one university in Western Australia. Students completed a validated questionnaire prior to engaging with unit learning materials and again at completion of the unit. Complete paired data was available for 339 participants. Results demonstrated statistically significant change in attitude following completion of the unit. Embedding targeted education concerning Aboriginal and Torres Strait Islander peoples' health and wellbeing positively influences attitudes in caring for this population of patients.

Keywords: Aboriginal people, cultural competence, First Peoples' health, Indigenous peoples, nursing student curriculum, transformative learning

Summary of relevance

Issue: Awareness of cultural health and wellbeing of First Nations people is necessary in nursing and midwifery studies. An assessment tool designed to measure attitude change has been validated but not tested on a large cohort of undergraduate nursing students.

What is already known: Cultural safety principles outline the need for critical thinking and transformative unlearning via reflective practice.

What this paper adds: Embedding research into learning and assessments is acceptable to students and provides additional evaluation opportunities. Targeted cultural education positively influences nursing student attitudes to care.

Introduction

Aboriginal and Torres Strait Islander peoples in Australia experience significant health disparities compared to the non-Indigenous population, resulting in higher morbidity and premature deaths (Australian Indigenous HealthInfoNet, 2024). These inequities are rooted in the historical and ongoing negative impacts of colonisation, which disrupted traditional lifestyles, dispossessed Indigenous peoples of their lands, and imposed foreign systems and values (Biles & Biles, 2020; Paradies, 2016). Furthermore, intergenerational trauma and loss of cultural identity resulting from colonisation continue to affect mental health and wellbeing (Darwin et al., 2023). Racism, both systemic and individual, further exacerbates these disparities by limiting access to quality health care, education and employment opportunities, contributing to poorer health outcomes (Bourke et al., 2019; Kairuz et al., 2021; Paradies et al., 2015).

Social determinants of health, including socioeconomic status, education, housing and access to health care, play a crucial role in these disparities and form an important aspect of undergraduate nursing education (Younas & Shahzad, 2021) Addressing these health inequities requires a holistic approach that includes culturally appropriate healthcare services, policies aimed at reducing social determinants of health disparities, and efforts to eliminate racism and promote social justice (Kairuz et al., 2021).

The Australian Nursing and Midwifery Accreditation Council's *Reflect Reconciliation Action Plan 2019–2020* (2019) for undergraduate nursing courses mandates that the preparation of nursing students includes education in providing culturally safe care to Aboriginal and Torres Strait Islander peoples. Similarly, the Australian Health Practitioner Registration Authority launched the Aboriginal and Torres Strait Islander Health and Cultural Safety Strategy in 2020 which identified racism as a significant issue in the health system (West et al., 2021). With nurses representing the overwhelming majority of Australia's health workforce (Australian Institute of Health and Welfare, 2020), it is important to ensure nursing students are armed with appropriate knowledge to understand the health issues most experienced by Aboriginal and Torres Strait Islander peoples and the barriers to accessing care, and that they have some insight into cultural practices pertaining to healthcare provision.

Zimmerman et al. (2019) reviewed the Aboriginal and Torres Strait Islander content within an Australian accredited Bachelor of Nursing program and found that academics teaching across the units were often unaware of the *Nursing and Midwifery Aboriginal and Torres Strait Islander Health Curriculum Framework* (Congress of Aboriginal and Torres Strait Islander Nurses and Midwives, 2017) and the relationship to nursing practice standards (Nursing and Midwifery Board of Australia, 2016). Furthermore, the Australian Commission on Safety and Quality in Health Care (ACSQHC) have defined six action items within the National Safety and Quality Health Service Standards that specifically relate to the care of Aboriginal and Torres Strait Islander consumers (ACSQHC, 2017). Action 1.21 specifically addresses the need to improve cultural competency in health service organisations (ACSQHC, 2017).

To help our nursing students further their knowledge, a new unit, Aboriginal and Torres Strait Islander Peoples' Health and Wellbeing, henceforth referred to as "the unit", was included in our undergraduate nursing curriculum in 2020. An opportunity to evaluate the effectiveness of the unit, particularly concerning transformative unlearning and critical thinking, arose with the publication of a validated questionnaire developed by Ryder et al. (2019) measuring attitudinal change in health professionals after completion of a cultural safety training program. This paper describes the results of the administration of this questionnaire to the first cohort to undertake the unit as an example of effective evaluation of student learning by embedding research into learning materials.

Aboriginal and Torres Strait Islander Peoples' Health and Wellbeing – the "unit"

This unit was developed as a collaboration between Edith Cowan University's School of Nursing and Midwifery and the university's Centre for Indigenous Australian Education and Research. The unit structure focuses on strengths-based learning materials and inclusion of general concepts, such as social determinants of health, prejudice, social justice and equity. In addition, sharing cultural and health specific knowledge regarding the health and wellbeing of Aboriginal and Torres Strait Islander peoples was determined collaboratively. The unit learning materials were structured around a core text, *Aboriginal and Torres Strait Islander Peoples' Health and Wellbeing* (Biles & Biles, 2020), as this text is written from a strengths-based, holistic approach and based on Australian Aboriginal cultural competence and the reconciliation framework. It was determined that this text was the most appropriate tool for content development, as each chapter was written in collaboration between Aboriginal and Torres Strait Islander and non-Indigenous nurses, midwives and allied health professionals.

The unit learning materials are presented in nine modules each consisting of recorded lectures and videos. Audio-visual resources ensured that Aboriginal and Torres Strait Islander peoples' voices were privileged over that of any non-Indigenous educators and were selected to represent examples of diversity across Aboriginal and Torres Strait Islander nations. Weekly face-to-face and online tutorials were designed to challenge students' thinking and reflection on their own culture and experiences, and to build empathy through discussion and interaction with other students.

The following learning outcomes for this unit were approved by the Australian Nursing and Midwifery Accreditation Council:

- Discuss the principles of cultural safety in relation to caring for Aboriginal and Torres Strait Islander peoples
- Identify historical events and their impact on health outcomes of Aboriginal and Torres Strait Islander peoples
- Analyse the role of contemporary Aboriginal and Torres Strait Islander health services
- Develop strategies that enable health professionals to collaborate with organisations and communities to improve health outcomes of Aboriginal and Torres Strait Islander peoples
- Examine strategies for culturally safe management of health issues for Aboriginal and Torres Strait Islander peoples.

There are many methods of assessing student learning. The role of reflective practice, both as a professional development tool and a method of demonstrating critical thinking, has become widely integrated into nursing curricula (Andre et al., 2017; Mills & Creedy, 2021). Reflection is a central tenet of cultural safety for nurses (Biles & Biles, 2020). Students in our undergraduate program are familiar with reflecting on clinical experiences and learnings and, in this unit, we aimed to develop each student's reflexivity to include knowledge of self and worldviews. To this end, the unit assessments included a written reflective piece. When developing this assessment, we searched for tools to inspire reflection about cultural safety and enable evaluation of changes in personal attitude rather than simply acquired knowledge.

This search located a validated questionnaire which measures "attitude change in health professionals after completion of an Aboriginal health and safety cultural safety training programme" (Ryder et al., 2019). Ryder et al. (2019) proposed three concepts of Indigenous health education in the development of their questionnaire which described a process of attitude change. The process starts with critical thinking, which involves challenging personal attitudes and core beliefs through reflection. Those core beliefs and attitudes evolve through a process of transformative unlearning. Finally, the principles of cultural safety can be applied to clinical practice. Ryder et al. (2019) suggest that attitude change leads to improved application of cultural safety principles.

The need for self-reflection is essential to providing culturally safe care, but the ability to reflect is underpinned by an ability to critically analyse one's beliefs and values against other sources of evidence, which can be a challenging and uncomfortable experience (Ryder et al., 2019). This discomfort can lead to a process of unlearning, which is transformative in changing attitudes and assumptions. Mills and Creedy (2021) used a process of unlearning called "the pedagogy of discomfort" in their study of non-Indigenous nursing students' critical reflections. They found that student reflections often demonstrated a range of emotions, including uncomfortable emotions, fragile identities, spectating, witnessing and acknowledging pre-conceived ideas. These emotions are suggested to either protect existing ways of thinking or lead to transformative learning experiences. As educators, we aimed to assess changes in attitudes as well as traditional content knowledge because we believe that cultural awareness and cultural sensitivity are essential processes in the development of empathy.

Even though other studies have examined cultural competence in relation to Aboriginal and Torres Strait Islander peoples (Biles et al., 2021; Fitzpatrick et al., 2019; Haswell et al., 2010; Hunt et al., 2015; West et al., 2019; West et al., 2018; Withall et al., 2021), no study has used a reliable and valid instrument to examine change in attitude after completing an Aboriginal and Torres Strait Islander peoples' health and wellbeing unit in an undergraduate nursing course. Therefore, we decided to trial embedding a validated tool within the learning materials of our unit so that students could begin the process of critical reflection before embarking on their learning journeys, and again at the end of the semester. Embedding the questionnaire within the learning materials provided a seamless opportunity for us to evaluate the impact of the learning materials on students' attitudes.

Aims and objectives

The aim of this study was to evaluate the effectiveness of the Aboriginal and Torres Strait Islander Peoples' Health and Wellbeing undergraduate nursing unit in changing students' attitudes toward Aboriginal and Torres Strait Islander peoples' health issues after undertaking the unit of study.

Participants, ethics and methods

Design and setting

A quasi-experimental, pre-test–post-test design was used to assess change in attitude after completing an educational unit at the School of Nursing and Midwifery at a major university in Western Australia.

Participants

The study population included all undergraduate student nurses commencing the unit in either Semester 1 or Semester 2 in 2020. Students typically enrol in this unit in the second year of their three-year course. Student anonymity in response to the questionnaire was maintained as the students generated their own unique identification code.

Instrument

Ryder et al. (2019) developed their questionnaire with the intention of evaluating cultural safety education programs from the thematic areas of cultural safety, critical thinking and transformative unlearning. The 15-item questionnaire uses a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The questionnaire has demonstrated face and content validity and exploratory factor analysis was calculated to determine construct validity. Cronbach's alpha was calculated above 0.7 for the two themes of "critical thinking" and "transformative unlearning", with most of the items providing high factor loadings (Ryder et al., 2019). The questionnaire meets good standards of test-retest reliability, with 11 of the 15 items reaching moderate agreement (*kappa* > 0.6) and an intraclass correlation coefficient of 0.72, suggesting substantial agreement.

Data collection

The first learning activity in the online unit materials was the questionnaire. On completion of the questionnaire, the remaining learning materials were released to students thus ensuring that the pre-test was free from influence of the learning materials. On completion of the post-questionnaire, situated at the end of the unit learning materials, students gained access to the submission portal for their final assessment. Students were able to skip to the end of the questionnaire without completion, thus reducing the risk of coercion to participate in the research study. Students were encouraged to think about whether their responses to the items had changed at the completion of the unit content and to journal or discuss these changes as further self-reflection and personal development. This element is consistent with cultural safety teachings which encourage a shift in perspective to a decolonising lens with a focus on reflection and reflexivity (Ryder et al., 2019).

Analysis

Survey data were collected in Qualtrics and exported to Microsoft Excel where before and after responses were collated using the unique identifier code created by the students at questionnaire completion. Following data cleaning, final responses were exported to IBM SPSS Statistics for Windows version 27 for analysis. Categorical data were reported as frequencies and percentages and continuous data reported as mean and standard deviation (*SD*) or median and interquartile range.

Interquartile range was expressed as the 25th and 75th percentile. As indicated, Questions 5, 8, 9, 10 and 13 were reverse coded (Ryder et al., 2019). The Wilcoxon signed-rank test was used to compare median differences between the before and after results. Further sub-analyses were conducted to determine if there were differences based on whether the student nurse was born in Australia or overseas. The alpha level was set at 0.05 for all statistical analyses.

A reliability analysis using internal consistency was conducted on the 15-item questionnaire for both the before and after surveys. Cronbach's alpha showed overall both the before and after questionnaire to reach acceptable reliability (before $\alpha = 0.70$; after $\alpha = 0.74$). A Cronbach alpha equal to or over 0.70 demonstrates high internal consistency (Field, 2017). Cronbach's alpha for the two themes of "critical thinking" (before $\alpha = 0.46$; after $\alpha = 0.59$) and "transformative unlearning" (before $\alpha = 0.76$; after $\alpha = 0.75$) showed mixed results.

Ethical considerations and researcher positioning

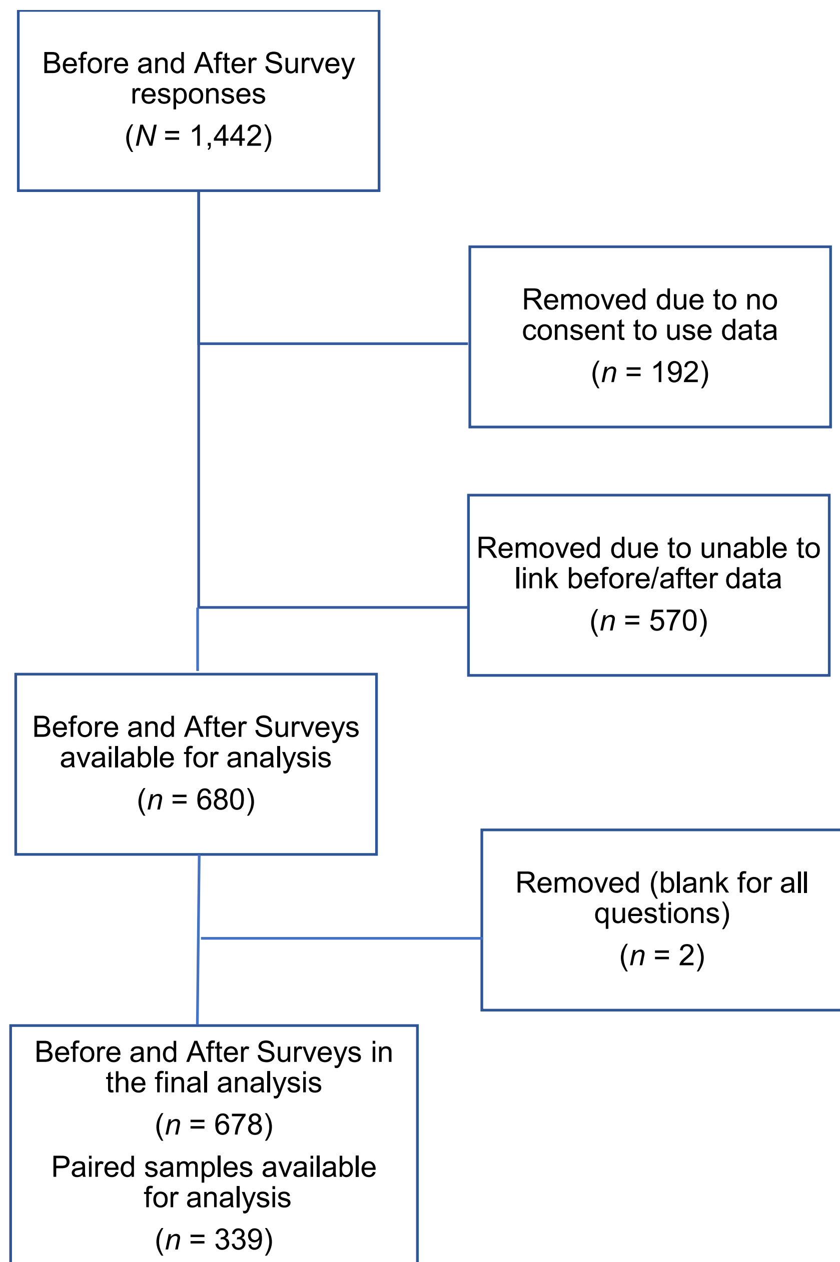
Ethical approval for this study was provided by Edith Cowan University Human Research Ethics Committee (approval number 2019-00887). Although the research study was embedded in the learning materials, student responses were voluntary and anonymous. Consent to include their responses was obtained for each respondent.

This project was led by a non-Indigenous registered nurse and academic (McCullough), who co-designed the unit and has taught Aboriginal and Torres Strait Islander health and cultural safety content for almost a decade. The project was guided by a Torres Strait Islander academic (Garvey), who was also a co-designer of the unit content. The other co-authors (Genoni, Murray and Coventry) were non-Indigenous researchers from within Edith Cowan University School of Nursing and Midwifery, and they contributed to data analysis and reporting.

Findings

During the study period, February 2020 to November 2020, the total number of students in Semester 1 was 608 and in Semester 2 was 268. The unit materials did not change between semesters. A total of 1,442 participant responses were recorded and exported from Qualtrics, 570 participants could not be linked to before and after, 192 participants did not provide consent for data analysis, two surveys had no responses allowing 678 ($n = 339$ paired) participant responses for data analysis (Figure 1).

Figure 1: Study flow diagram



Most of the participants were women (n = 301, 88.8%) with a mean age of 27.7 (*SD* 8.6) years. Almost half of the participants were born overseas (n = 171, 50.4%) of which the mean number of years living in Australia was 10.3 (*SD* 8.7). Only five participants identified as being Indigenous (Table 1).

Table 1: Demographic characteristics of the cohort

Variable	*n*	(%)	Mean	(*SD*)	Median	(IQR)
Age in years (*n* = 339)			27.64	(8.6)	24	(20–34)
Gender						
Female	301	(88.8)				
Male	35	(10.3)				
Non-binary	1	(0.3)				
Indigenous						
Yes	5	(1.5)				
No	330	(97.3)				
Born in Australia						
Yes	153	(48.7)				
No	157	(50.0)				
If not born in Australia, number of years living in Australia			10.3	(8.7)	8	(3–14)

n = number; % = percentage; *SD* = standard deviation; IQR = interquartile range expressed as 25th to 75th percentile

Of the 15-items in the questionnaire, 14 questions showed statistically significant difference after completion of the unit (Table 2). Question 13 was the only item which did not change. In Table 2 the responses are reverse-coded so agreement and disagreement are reversed. This means that, although there was no change, most students (*n* = 195, 58%) disagreed or strongly disagreed with the statement "We practice equity in the provision of health care by treating Aboriginal people the same as all other clients".

Table 2: Responses to attitude questionnaire before and after education

	Before education						After education						
Question	Median	SA *n* (%)	A *n* (%)	N *n* (%)	D *n* (%)	SD *n* (%)	Median	SA *n* (%)	A *n* (%)	N *n* (%)	D *n* (%)	SD *n* (%)	*p* value*
Critical Thinking													
Q1	4.0	109 (32.5)	161 (48.1)	43 (12.7)	15 (4.5)	7 (2.1)	5.0	186 (55.7)	113 (33.8)	26 (7.8)	1 (0.3)	8 (2.4)	<0.001
Q2	4.0	42 (12.4)	168 (49.6)	59 (17.7)	43 (12.7)	26 (7.7)	4.0	113 (33.1)	174 (51.9)	29 (8.7)	4 (1.2)	17 (5.1)	<0.001
Q8†	3.0	32 (9.4)	75 (22.1)	108 (32.1)	82 (24.4)	39 (11.6)	4.0	83 (24.7)	111 (33.0)	47 (14.0)	11 (3.3)	82 (25.0)	<0.001
Q9†	3.0	35 (10.3)	107 (31.6)	102 (30.2)	75 (22.2)	19 (5.6)	4.0	36 (10.7)	157 (46.9)	78 (23.3)	35 (10.4)	29 (8.7)	<0.001
Q10†	3.0	37 (10.9)	65 (19.2)	106 (31.4)	85 (25.1)	45 (13.3)	4.0	60 (17.9)	132 (39.3)	43 (12.8)	2 (0.6)	99 (29.5)	0.001
*Q13†	4.0	133 (39.2)	61 (18.3)	53 (15.9)	45 (13.5)	44 (13.2)	4.0	108 (32.2)	108 (32.2)	56 (16.7)	7 (2.1)	56 (16.7)	0.450
Transformative Unlearning													
Q3	5.0	190 (56.7)	116 (33.9)	19 (5.7)	4 (1.2)	6 (1.8)	5.0	236 (70.9)	78 (23.4)	14 (4.2)	0 (0.0)	5 (1.5)	<0.001
Q4	5.0	293 (87.5)	32 (9.7)	2 (0.6)	2 (0.6)	6 (1.8)	5.0	304 (91.0)	23 (6.9)	2 (0.6)	0 (0.0)	5 (1.5)	0.022
Q5†	3.0	28 (8.3)	65 (19.5)	107 (31.8)	96 (28.5)	41 (12.2)	4.0	41 (12.2)	137 (40.9)	71 (21.2)	10 (3.0)	76 (22.7)	<0.001
Q6	5.0	193 (57.4)	105 (31.6)	13 (3.9)	10 (3.0)	15 (4.5)	5.0	232 (69.3)	74 (22.1)	14 (4.2)	3 (0.9)	12 (3.6)	<0.001
Q7	4.0	122 (36.1)	152 (44.8)	40 (11.8)	19 (5.6)	5 (1.5)	5.0	173 (51.6)	133 (39.7)	21 (6.3)	3 (0.9)	5 (1.5)	<0.001
Q11	5.0	242 (72.0)	65 (19.2)	22 (6.5)	5 (1.5)	3 (0.9)	5.0	278 (83.0)	44 (13.1)	8 (2.4)	2 (0.6)	3 (0.9)	<0.001
Q12	5.0	216 (64.6)	73 (21.8)	27 (8.1)	10 (3.0)	9 (2.7)	5.0	261 (78.4)	45 (13.5)	17 (5.1)	0 (0.0)	10 (3.0)	<0.001
Q14	5.0	170 (51.0)	121 (35.7)	31 (9.3)	6 (1.8)	6 (1.8)	5.0	240 (71.6)	83 (24.8)	8 (2.4)	0 (0.0)	4 (1.2)	<0.001
Q15	5.0	191 (56.9)	98 (28.6)	39 (11.6)	4 (1.2)	5 (1.5)	5.0	249 (74.6)	67 (20.1)	13 (3.9)	0 (0.0)	5 (1.5)	<0.001

* Wilcoxon signed-rank test
† Questions were reversed coded
SA = strongly agree; A = agree; N = neither agree or disagree; D = disagree; SD = strongly disagree
(*SD*) = standard deviation; *n* = number; % = percentage

Q1. I think my beliefs and attitudes are influenced by my culture.
Q2. Health professionals' own cultural beliefs influence their healthcare decisions.
Q8. Aboriginal people, due to their own cultural beliefs and values, have the poorest health status in Australia.
Q9. Aboriginal people should take more individual responsibility for improving their own health.
Q10. The Western medical model is sufficient in meeting the health needs of all people including Aboriginal peoples.
Q13. We practice equity in the provision of health care by treating Aboriginal people the same as all other clients.
Q3. Time in the health professional curriculum devoted to the promotion of student self-awareness and wellbeing is time well spent.
Q4. A health professional's ability to communicate with patients is as important as his/her ability to solve clinical problems.
Q5. The presence of more than two family members in a hospitalised patient's room is disruptive to staff and roommates and should be prohibited.
Q6. The quality of patient/client care could possibly be compromised if a health professional is oblivious to the family's cultural attributes and values.
Q7. As a health professional if I needed more information about a person's culture to provide a service, I would feel comfortable asking the person or one of their family members.
Q11. All Australians need to understand Aboriginal history and culture.
Q12. Aboriginal people should not have to change their culture just to fit in.
Q14. I need to think beyond the individual when considering Aboriginal health issues.
Q15. I have a social responsibility to work for changes in Aboriginal health.

The responses after completion of the unit are presented as those with positive change, those with negative change and those with no change (Table 3). Of the 339 participants, Question 2 "Health professionals' own cultural beliefs influence their healthcare decisions" had the greatest difference in scores (0.62) with 168 participants having a positive response, 41 participants a negative response and 125 participants had no changes in their responses. Question 4 "A health professional's ability to communicate with patients is as important as his/her ability to solve clinical problems" and Question 13 "We practice equity in the provision of health care by treating Aboriginal people the same as all other clients" had the smallest difference in scores (0.08 and 0.05 respectively).

Table 3. Difference in responses after completion of the Aboriginal and Torres Strait Islander Peoples' Health and Wellbeing nursing unit

No.	Question	Mean difference in scores	Positive change *n*	Negative change *n*	No change in response *n*
Critical Thinking					
Q1	I think my beliefs and attitudes are influenced by my culture.	0.39	126	37	173
Q2	Health professionals' own cultural beliefs influence their healthcare decisions.	0.62	168	41	125
Q8†	Aboriginal people, due to their own cultural beliefs and values, have the poorest health status in Australia.	0.37	153	84	98
Q9†	Aboriginal people should take more individual responsibility for improving their own health.	0.24	123	68	145
Q10†	The Western medical model is sufficient in meeting the health needs of all people including Aboriginal peoples.	0.28	147	87	102
Q13†	We practice equity in the provision of health care by treating Aboriginal people the same as all other clients.	0.05	109	102	122
Transformative Unlearning					
Q3	Time in the health professional curriculum devoted to the promotion of student self-awareness and wellbeing is time well spent.	0.23	100	42	189
Q4	A health professional's ability to communicate with patients is as important as his/her ability to solve clinical problems.	0.08	37	21	276
Q5†	The presence of more than two family members in a hospitalised patient's room is disruptive to staff and roommates and should be prohibited.	0.36	148	83	101
Q6	The quality of patient/client care could possibly be compromised if a health professional is oblivious to the family's cultural attributes and values.	0.21	87	43	207
Q7	As a health professional if I needed more information about a person's culture to provide a service, I would feel comfortable asking the person or one of their family members.	0.32	120	42	173
Q11	All Australians need to understand Aboriginal history and culture.	0.19	67	24	247
Q12	Aboriginal people should not have to change their culture just to fit in.	0.22	87	36	214
Q14	I need to think beyond the individual when considering Aboriginal health issues.	0.32	117	28	189
Q15	I have a social responsibility to work for changes in Aboriginal health.	0.27	98	30	208

n = number; † Questions were reversed coded

Further sub-analyses showed there was a difference in the responses of student nurses who were born in Australia compared with born overseas for Question 9 "Aboriginal people should take more individual responsibility for improving their own health" (born in Australia before median = 3.0 to after median = 4.0, p = 0.180; born overseas before median = 3.0 to after median = 4.0, p < 0.001). Similarly, Question 10 "The Western medical model is sufficient in meeting the health needs of all people including Aboriginal peoples" (born in Australia before median = 3.0 to after median = 4.0, p = 0.106; born overseas before median = 3.0 to after median = 4.0, p = 0.004). The responses of student nurses born in Australia were different compared with born overseas for Question 4 "A health professional's ability to communicate with patients is as important as his/her ability to solve clinical problems" (born in Australia before median = 5.0 to after median = 5.0, p = 0.333; born overseas before median = 5.0 to after median = 5.0, p = 0.023) (Table 4).

Table 4. Responses to attitude questionnaire before and after education if born in Australia compared with born overseas

Questions	Born in Australia				Born overseas			
	Before Median	After Median	Mean difference in scores	*p* value	Before Median	After Median	Mean difference in scores	*p* value
Critical Thinking Q1	4.0	5.0	0.40	<0.001	4.0	5.0	0.39	<0.001
Q2	4.0	4.0	0.60	<0.001	4.0	4.0	0.66	<0.001
Q8†	3.0	4.0	0.33	0.003	3.0	4.0	0.40	0.003
Q9†	3.0	4.0	0.12	0.180	3.0	4.0	0.32	<0.001
Q10†	3.0	4.0	0.18	0.106	3.0	4.0	0.37	0.004
Q13†	4.0	4.0	0.20	0.111	4.0	4.0	-0.11	0.474
Transformative Unlearning								
Q3	5.0	5.0	0.16	0.006	5.0	5.0	0.33	<0.001
Q4	5.0	5.0	0.04	0.333	5.0	5.0	0.13	0.023
Q5†	3.0	4.0	0.36	0.002	3.0	4.0	0.36	0.001
Q6	5.0	5.0	0.22	0.001	4.0	5.0	0.21	0.026
Q7	4.0	4.0	0.33	<0.001	4.0	5.0	0.32	<0.001
Q11	5.0	5.0	0.19	<0.001	5.0	5.0	0.19	0.003
Q12	5.0	5.0	0.23	0.004	5.0	5.0	0.23	0.003
Q14	5.0	5.0	0.24	<0.001	4.0	5.0	0.40	<0.001
Q15	5.0	5.0	0.24	<0.001	5.0	5.0	0.29	<0.001

† Questions were reversed coded

Discussion

This study aimed to evaluate changes in undergraduate students' attitudes towards Aboriginal and Torres Strait Islander health issues in the domains of critical thinking and transformative unlearning. Critical thinking is a process where how a student thinks is more important than what a student thinks (Mulnix, 2012). Therefore, the focus of this research was on the degree of change rather than students selecting the "correct" answer. Positive improvements were found in 14 of the 15 items. As educators, we generally expected the change to be towards the "strongly agree" direction ("strongly disagree" for the reverse coded questions); however, we note that some statements could be argued in the opposite direction, while remaining consistent with cultural safety principles and as such there are no correct answers.

The greatest changes were in Question 1 "I think my beliefs and attitudes are influenced by my culture" and Question 2 "Health professionals' own cultural beliefs influence their healthcare decisions". We interpret this finding to mean that students had engaged in critical self-reflection and examination of colonising practices and privilege, in addition to awareness of difference, which is the underlying tenet of cultural competence (Curtis et al., 2019). This was a pleasing finding, as our focus on concepts such as equity, power and privilege aimed to support critical analysis of students' own cultures and values, rather than a superficial presentation of genetic, cultural or biological differences (Curtis et al., 2019).

In addition, there was no change in responses for Question 13, which required students to differentiate between *equity* as *fairness* and *equality* as *sameness* (Taylor et al., 2021). This finding is important because cultural safety is fundamentally about health equity, and we were concerned that the unit content was not effectively challenging students' attitudes and awareness of power imbalances in individual and systemic interactions within the health setting (Curtis et al., 2019). This study prompted a revision of the unit content regarding equity to draw greater attention to understanding these concepts within the context of Aboriginal and Torres Strait Islander health. Analysis of future questionnaire results will demonstrate whether those changes were effective.

International students had a greater degree of change. This is not surprising, as knowledge and understanding of the culture and history of Australia is gained through exposure, so these students are starting from a knowledge deficit. Despite the deficit in local knowledge, the process of unlearning is relevant, as the unit concept taught universally applicable concepts like racism, social determinants of health and privilege. We also acknowledge that within our cohort we have Aboriginal and Torres Strait Islander students and domestic Australian-born students with varying levels of exposure to Aboriginal and Torres Strait Islander health, history and culture. The process of self-reflection aids in transformative unlearning by identifying and critiquing prior knowledge and attitudes. Completing the questionnaire as a learning activity was designed to aid students in their self-assessment of knowledge and attitude.

The course learning objectives required discussion of the principles of cultural safety, which reflects the nursing practice standards (Nursing and Midwifery Board of Australia, 2016). However, cultural safety is a complex and evolving construct which includes elements of cultural competency, awareness, humility, sensitivity, security, respect and adaptation (Curtis et al., 2019). To that end, cultural safety is seen as an outcome of practitioners "being aware of difference, decolonising, considering power relationships, implementing reflective practice, and by allowing the patient to determine whether a clinical encounter is safe" (Curtis et al., 2019, p. 13). We acknowledge a limitation of the questionnaire developed by Ryder et al. (2019) in that it does not measure cultural safety per se, but rather elements of reflective practice, that is, critical thinking and transformative unlearning.

Other authors have developed ways of assessing similar constructs in relation to Aboriginal and Torres Strait Islander health units, such as cultural capability (West et al., 2019; West et al., 2018), growth and empowerment (Fitzpatrick et al., 2019; Haswell et al., 2010), cultural safety (Biles et al., 2021; Withall et al., 2021), student attitude, and knowledge interest and confidence (Hunt et al., 2015). Further, a comprehensive review of the literature regarding health professional student experiences and outcomes (Mills et al., 2018) found that student experiences and learning in Indigenous health units included increased knowledge and value, increased cultural competence, and critical thinking alongside emotional responses related to the learning materials and experience. While these studies provide some insight into our students' learning, it is unlikely that changes in attitude only occur during the learning in this unit, as Aboriginal and Torres Strait Islander perspectives and experiences are interwoven

throughout the entire course. Studies which evaluate learning in this arena, but across the whole course, including practical clinical experiences, may be more useful.

Implications for undergraduate education and implications for further research

Evaluating attitude change will continue to guide the delivery of learning content and may be useful for other courses where Aboriginal and Torres Strait Islander peoples' health and wellbeing content is included. While not reported here, our students were assessed on their critical reflection of several items from this questionnaire. Reflecting on individual items, combined with a requirement to present an argument both agreeing and disagreeing with the item, appeared to be an effective method of assessing transformative unlearning and critical thinking. It also went some way towards demonstrating principles of cultural safety, which can be applied to clinical practice (an original aim of the questionnaire developed by Ryder et al. (2019)). Analysis of student reflections may provide qualitative insight into further development of this instrument.

Furthermore, the use of this tool is expected to contribute to quality teaching processes as changes to learning materials, teaching methods and assessments will be able to be evaluated. Validation of the questionnaire with populations of other indigenous communities may increase the global use of this instrument. The original authors of the questionnaire note some limitations and concepts which may require further development and a revised tool to broaden measurement of cultural safety and its related constructs is warranted.

Strengths and limitations

The strengths of this study include the large cohort of undergraduate nurses who participated and the large sample size of paired responses available for data analysis. Additionally, the questionnaire used in this study has demonstrated validity and reliability. While we are confident in the results showing statistical change in attitudes observed in undergraduate nursing students after completing the unit, some limitations need to be acknowledged. While there was an improvement in scores on the attitude questionnaire, some of the scores had small changes. The importance of these small changes may not be educationally meaningful. Also, some data could not be matched before and after the survey completion (this may be due to a too-complex method for students to generate their own code) and almost 10% of students did not consent to have their data analysed. We also acknowledge the internal consistency for the theme of "critical thinking" had sub-optimal results that suggest the theme may not be reliable; however, we did find the overall internal consistency of the questionnaire to have adequate reliability.

Conclusion

To provide culturally safe care to Australia's Aboriginal and Torres Strait Islander peoples requires nurses to have knowledge and understanding of the culture and health needs of this population. Undergraduate student cohorts are diverse, as is the nature of patients in their care. Providing education in caring for Aboriginal and Torres Strait Islander peoples prepares student nurses with a baseline understanding of the influence of culture on health with which to begin their clinical careers. Embedding content concerning Aboriginal and Torres Strait Islander peoples' health and wellbeing into the undergraduate curriculum serves to positively influence a change in attitude of undergraduate nursing students toward caring for this cohort of patients.

Acknowledgements

The authors acknowledge the assistance of Rebecca Schulz (industry partner, unit co-author), Rebecca Scriven (senior learning advisor, Centre for Learning and Teaching, Edith Cowan University) and Melissa Dunham (research assistant). The authors also acknowledge the financial support of Edith Cowan University through funding the research described in this article via a Teaching and Learning grant.

References

Andre, K., Heartfield, M., & Cusack, L. (2017). *Portfolios for health professionals* (3e ed.). Elsevier.

Australian Commission on Safety and Quality in Health Care. (2017). *National safety and quality health service standards: User guide for Aboriginal and Torres Strait Islander health*. https://www.safetyandquality.gov.au/sites/default/files/migrated/National-Safety-and-Quality-Health-Service-Standards-User-Guide-for-Aboriginal-and-Torres-Strait-Islander-Health.pdf

Australian Indigenous HealthInfoNet. (2024). *Overview of Aboriginal and Torres Strait Islander health status 2023*. https://healthinfonet.ecu.edu.au/healthinfonet/getContent.php?linkid=706475

Australian Institute of Health and Welfare. (2020). A profile of primary health care nurses. https://www.aihw.gov.au/getmedia/cab9dde2-6a3d-42bc-9481-0a51e0bb4372/A-profile-of-primary-health-care-nurses.pdf.aspx?inline=true

Australian Nursing and Midwifery Accreditation Council. (2019). *Reflect reconciliation action plan 2019–2020*. https://www.anmac.org.au/sites/default/files/documents/reflectrap.pdf

Biles, B., & Biles, J. (Eds.). (2020). *Aboriginal and Torres Strait Islander peoples' health and wellbeing*. Oxford University Press.

Biles, J., Biles, B., West, R., Saunders, V., & Armaou, J. (2021). Aboriginal and Torres Strait Islander subjects in a Graduate Diploma of Midwifery: A pilot study. *Contemporary Nurse*, *57*(5), 317–326.

Bourke, C. J., Marrie, H., & Marrie, A. (2019). Transforming institutional racism at an Australian hospital. *Australian Health Review*, *43*(6), 611–618. https://doi.org/10.1071/AH18062

Congress of Aboriginal and Torres Strait Islander Nurses and Midwives. (2017). *Nursing and midwifery Aboriginal and Torres Strait Islander health curriculum framework*. https://www.catsinam.org.au/static/uploads/files/nursing-midwifery-health-curriculum-framework-final-version-1-0-wfffegyedblq.pdf

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. *International Journal for Equity in Health*, *18*(1), Article 174. https://doi.org/10.1186/s12939-019-1082-3

Darwin, L., Vervoort, S., Vollert, E., & Blustein, S. (2023). *Intergenerational trauma and mental health*. Australian Institute of Health and Welfare, Australian Government.

Field. (2017). Discovering Statistics Using IBM SPSS Statistics, [Chegg].

Fitzpatrick, S. A., Haswell, M. R., Williams, M. M., Nathan, S., Meyer, L., Ritchie, J. E., & Jackson Pulver, L. R. (2019). Learning about Aboriginal health and wellbeing at the postgraduate level: Novel application of the Growth and Empowerment Measure. *Rural and Remote Health*, *19*(2), Article 4708. https://doi.org/10.22605/RRH4708

Haswell, M. R., Kavanagh, D., Tsey, K., Reilly, L., Cadet-James, Y., Laliberte, A., Wilson, A., & Doran, C. (2010). Psychometric validation of the Growth and Empowerment Measure (GEM) applied with Indigenous Australians. *Australian & New Zealand Journal of Psychiatry*, *44*(9), 791–799.

Hunt, L., Ramjan, L., McDonald, G., Koch, J., Baird, D., & Salamonson, Y. (2015). Nursing students' perspectives of the health and healthcare issues of Australian Indigenous people. *Nurse Education Today*, *35*(3), 461–467.

Kairuz, C. A., Casanelia, L. M., Bennett-Brook, K., Coombes, J., & Yadav, U. N. (2021). Impact of racism and discrimination on physical and mental health among Aboriginal and Torres Strait Islander peoples living in Australia: A systematic scoping review. *BMC Public Health*, *21*(1), Article 1302. https://doi.org/10.1186/s12889-021-11363-x

Mills, K., & Creedy, D. (2021). The "pedagogy of discomfort": A qualitative exploration of non-Indigenous student learning in a First Peoples health course. *The Australian Journal of Indigenous Education*, *50*(1), 29–37.

Mills, K., Creedy, D. K., & West, R. (2018). Experiences and outcomes of health professional students undertaking education on Indigenous health: A systematic integrative literature review. *Nurse Education Today*, *69*, 149–158.

Mulnix, J. W. (2012). Thinking critically about critical thinking. *Educational Philosophy and Theory*, *44*(5), 464–479.

Nursing and Midwifery Board of Australia. (2016). *Registered nurse standards for practice*. https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/Professional-standards/registered-nurse-standards-for-practice.aspx

Paradies, Y. (2016). Colonisation, racism and indigenous health. *Journal of Population Research*, *33*(1), 83–96. https://doi.org/10.1007/s12546-016-9159-y

Paradies, Y., Ben, J., Denson, N., Elias, A., Priest, N., Pieterse, A., Gupta, A., Kelaher, M., & Gee, G. (2015). Racism as a determinant of health: A systematic review and meta-analysis. *PLoS One*, *10*(9), Article e0138511. https://doi.org/10.1371/journal.pone.0138511

Ryder, C., Mackean, T., Ullah, S., Burton, H., Halls, H., McDermott, D., & Edmondson, W. (2019). Development and validation of a questionnaire to measure attitude change in health professionals after completion of an Aboriginal health and cultural safety training programme. *The Australian Journal of Indigenous Education*, *48*(1), 24–38. https://doi.org/10.1017/jie.2017.37

Taylor, J., O'Hara, L., Talbot, L., & Verrinder, G. (2021). *Promoting health: The primary health care approach* (7th ed.). Elsevier Australia.

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. *Contemporary Nurse*, *57*(5), 356–369. https://doi.org/10.1080/10376178.2022.2025876

West, R., Mills, K., Rowland, D., & Creedy, D. (2019). Impact of a discrete First Peoples health course on students' experience and development of cultural capabilities. *Higher Education Research & Development*, *38*(5), 1090–1104.

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 Education Today*, *64*, 166–171. https://doi.org/10.1016/j.nedt.2018.02.022

Withall, L., Ryder, C., Mackean, T., Edmondson, W., Sjoberg, D., McDermott, D., & Wilson, A. (2021). Assessing cultural safety in Aboriginal and Torres Strait Islander Health. *Australian Journal of Rural Health*, *29*(2), 201–210.

Younas, A., & Shahzad, S. (2021). Emphasizing the need to integrate social determinants of health in undergraduate nursing curricula. *Nurse Education Today*, *103*(1), Article 104943. https://doi.org/10.1016/j.nedt.2021.104943

Zimmerman, P.-A., Stringfellow, T., Rowland, D., Armstrong, V., & West, R. (2019). Review of Aboriginal and Torres Strait Islander content within a Bachelor of Nursing. *Collegian*, *26*(4), 441–447.

About the authors

Dr Kylie McCullough is a teaching research scholar whose focus is Aboriginal and Torres Strait Islander health, primary health care and remote area nursing. She is a registered nurse with 25 years of clinical nursing experience.

Dr Angela Genoni is a nutritionist and researcher with experience in quantitative methodologies.

Dr Melanie Murray is a senior lecturer and researcher with a focus on development of early career nursing practice.

Dr Darren Garvey was born and raised in Cairns, North Queensland, and his heritage extends north to the Torres Strait region of Australia. He has a background in community mental health, and extensive teaching and curriculum design experience, informed by more than two decades working for the Centre for Aboriginal Studies at Curtin University. He currently holds a position as a Senior Lecturer with Kurongkurl Katitjin, Centre for Indigenous Australian Education and Research at Edith Cowan University.

Dr Linda Coventry is a Senior Research Fellow within the School of Nursing and Midwifery and has an Adjunct Research Fellow position with the Centre for Nursing Research at Sir Charles Gairdner Hospital.

Please cite this article as:

McCullough, K., Genoni, A., Murray, M., Garvey, D., & Coventry, L. (2024). Measuring attitude change in nursing students after completion of a First Nations peoples' health unit: Embedding a validated tool in learning and assessment practices. *The Australian Journal of Indigenous Education*, *53*(1). DOI 10.55146/ajie.v53i1.609

Except where otherwise noted, content in this journal is licensed under a Creative Commons Attribution 4.0 International Licence. As an open access journal, articles are free to use with proper attribution. ISSN: 2049-7784.

The Australian Journal of Indigenous Education
Volume 53 | Issue 1 | © The Author/s 2024 doi 10.55146/ajie.v53i1.609