REVIEW ARTICLE

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Cultural safety and First Nations health content within tertiary education for undergraduate health-care students: A scoping review

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Abstract

Introduction: Many health professional university programs have integrated content on First Nations health into their curricula in response to the serious health inequities between First Nations and non-First Nations peoples.

Methods: A scoping review was conducted, aiming to provide a deeper understanding of the various ways that tertiary education institutions are incorporating content on First Nations health and cultural safety into health professional education curricula, and how learning outcomes related to cultural capability are assessed.

Online databases were used to identify papers published globally between 1995 and 2021, from which 28 were selected.

Consumer and Community Involvement: First Nations co-authors, working alongside occupational therapy academics, have ensured that the meaning and context of the relevant studies have been thoroughly understood and that appropriate terminology has been used throughout the review.

Findings: There is considerable variability in the way that content on First Nations health is delivered and assessed within the tertiary sector for health-care students, internationally. There are limited assessment tools that provide a comprehensive understanding of the ability to work in a culturally safe manner with First Nations peoples.

Conclusion: The importance of having an understanding of First Nations peoples and health is recognised, with many institutions now, including this information into the university curricula as one method to positively impact the health outcomes of First Nations peoples, as well as in response to health professional accreditation and registration requirements.

There remains variability with regard to how this content is delivered and assessed. Despite encouraging data on learning outcomes, it remains unclear whether this intervention has an impact on the health-care practices of

graduates once they enter the workforce. Further research into the impact of this strategy is warranted in order to determine its effectiveness.

PLAIN LANGUAGE SUMMARY

Many university programs for health professionals are recognising the importance of, including information about First Nations people in their courses, in an attempt to improve understanding and delivery of services to this population and address health inequities.

This scoping review investigated how universities teach health-care students about First Nations health and cultural safety. It also explored how students' knowledge in this area was assessed. A total of 28 papers were selected and analysed within this review.

The review found that there is great of variation in how universities teach and evaluate knowledge of this subject area. Some use a mix of online and face-to-face classes; it may be taught as a one off class or integrated throughout the entire curriculum. Activities like cultural immersion are also used.

While many studies showed that students' knowledge and attitudes improved after learning about First Nations health, it is unclear if this education affects how the students practice as health-care professionals once they graduate, and if this has any impact on the health care and outcomes for First Nations people.

Further research in this area is needed, focussing on how various teaching methods affect student learning, and how to accurately measure cultural safety. It should also consider the impact of culturally safe care on First Nations people's health and wellbeing.

This review has some limitations. It only reviewed studies published in English and did not fully explore Indigenous teaching methods, nor did it consider the impact this innovation has on future practice as a health-care professional.

1 | INTRODUCTION

1.1 | Rationale

Inequity between the health and wellbeing outcomes of First Nations and non-First Nations peoples throughout the world is a persistent challenge (Mackean et al., 2020; McGough et al., 2018). In Australia, the health of First Nations peoples is a national priority due to disparities evident across every social, health, and wellbeing indicator (Commonwealth of Australia, 2014; Ryder et al., 2019).

Registered health practitioners within Australia are required to work in a manner that is respectful and culturally appropriate to all peoples and consider the needs

Key Points for Occupational Therapy

- Occupational therapists are required to work in a culturally safe and responsive manner with First Nations peoples.
- A variety of initiatives are being undertaken to address cultural safety in this emergent area of health sciences curriculum and pedagogy.
- Further research is required into student education and assessment, and the impact this has on the provision of occupational therapy services to First Nations peoples.

of Aboriginal and Torres Strait Islander Peoples (Australian Health Practitioner Regulation Agency and National Boards, 2022). Despite this, there are repeated reports of First Nations peoples feeling unsafe and avoiding health-care services altogether (Australian Institute of Health and Welfare, 2022; Gilroy et al., 2024; McGough et al., 2018; Nolan-Isles et al., 2021; Pinero de Plaza et al., 2023).

Ensuring the health workforce is equipped to practice in a culturally safe manner and meet the needs of First Nations peoples and is one approach to addressing these issues (Commonwealth of Australia, 2014; Withall et al., 2021). Cultural awareness, such as through education, is an initial step towards cultural safety (Ramsden, 2002). Being able to work in a culturally safe manner requires health-care professionals to apply learned knowledges into clinical practice (Withall et al., 2021), and as such, it is essential to understand the theory and how this is being taught.

First Nations health content into the tertiary health curricula has the potential to improve the capacity of the future health-care workforce to deliver culturally safe health care, which could result in positive health outcomes for First Nations peoples and communities (Commonwealth of Australia, 2014; Deravin et al., 2018; Health Workforce Australia, 2014; Mills et al., 2018; West et al., 2019; Zimmerman et al., 2019).

In Australia, the Aboriginal and Torres Strait Islander Health Curriculum Framework [the Framework] was introduced in 2014, to support universities in designing curriculum that enables health-care students to develop the ability to provide culturally appropriate and safe health-care services to Aboriginal and Torres Strait Islander peoples (Commonwealth of Australia, 2014). Many Australian university health professional programs now include information on First Nations health in their curriculum (Coombe et al., 2019; Mills et al., 2018; West et al., 2019; Zimmerman et al., 2019). Accredited health professional programs within Australia, such as occupational therapy, are required to provide education on cultural capability and Aboriginal and Torres Strait Islander health within their curriculum (Occupational Therapy Council of Australia Ltd, 2018).

Developing a successful curriculum in relation to cultural safety and First Nations peoples involves many facets, including consideration of the content, how it is delivered, and assessed (Melchert et al., 2016). Other areas of importance include educator capabilities, Indigenous pedagogies, and collaboration with Aboriginal and Torres Strait Islander peoples (Zubrzycki et al., 2014). This scoping review was undertaken to map this emerging area, identify gaps, and inform research on the education of health professionals (Munn et al., 2018). The findings from this review have the potential to inform future pedagogy and curriculum development within university health programs as they incorporate culturally safe health competencies into their programs. It may also contribute to the further development of professional accreditation guidelines focussed on the delivery of culturally safe and appropriate health-care services.

1.1.1 | Terminology

In this review, 'First Nations' refers specifically to Aboriginal and Torres Strait Islander peoples and groups within Australia and Indigenous peoples throughout the world. Where published works have been cited, the terminology used within the original document has been applied where possible.

The term 'cultural safety' in this paper refers to the ability of health professionals to provide health-care services that are respectful and responsive to the cultural values, needs, and strengths of First Nations peoples. It is recognised that awareness and education are the first steps towards being able to achieve this (Ramsden, 2002).

This paper focusses on one aspect of the curriculum, the stated content (e.g., subject matter, theme, and topic), as reported within the identified papers. Throughout this review, the term 'content' will be used to describe this dimension.

1.2 | Research questions

This scoping review will address the following questions:

- What is the content and how is content on First Nations health and/or cultural safety delivered, within the tertiary education sector for health-care students?
- How is knowledge and competency regarding First Nations health assessed in the tertiary education of health-care students, specifically with regard to the ability to practice in a culturally safe manner?

2 | METHODS

2.1 | Positionality statement

2.1.1 | Author 1—VT

VT is an occupational therapist with over 30 years clinical experience. She is currently a university lecturer and has been instrumental in developing partnerships between the university and the local First Nations

community. VT was introduced to her local Aboriginal community over 10 years ago, at which stage she became aware of barriers experienced with access to culturally appropriate health care. This led to an ongoing desire to make a difference within the lives of First Nations peoples. VT is currently undertaking higher degree research focussing on the education and training required in order to develop an occupational therapy workforce that is able to provide culturally safe services.

2.1.2 | Author 2—SB

SB is an Aboriginal man form the Yuin Nation from the far south coast of New South Wales. He is well versed in community protocols for conducting research. He is experienced with curriculum design and implementation in Indigenous knowledges and Indigenous research methodologies, as well as Aboriginal community development.

2.1.3 | Author 3—MD

MD is an occupational therapy academic skilled in research design and methodologies, evaluation research, qualitative research methodologies, and data analysis. She is experienced with conducting research with Aboriginal services and community members.

2.1.4 | Author 4—BM

BM is an experienced occupational therapist and university academic. She is skilled at curriculum design, implementation and evaluation, and health professional education.

2.1.5 | Author 5—TS

TS is a Pitjantjatjara and Anmatyerre woman with strong community ties in South Australia, the Northern Territory and New South Wales. TS is an experienced researcher in the areas of Indigenous knowledges and research methodologies, pedagogy and curriculum, and understanding of cultural protocols.

2.2 | Protocol and registration

This scoping review followed the process outlined by the Joanna Briggs Institute Methods Manual for Scoping

Reviews (Peters et al., 2020) and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018). The protocol was registered with the Open Science Framework https://doi.org/10.17605/OSF.IO/2W5C6.

2.3 | Eligibility criteria

The search strategy was limited to peer-reviewed research articles published in English between 1995 and 2021. These time frames were selected as the concept of cultural safety, and inclusion of First Nations health content into tertiary education is a fairly recent phenomenon (Commonwealth of Australia, 2014; Ramsden, 2002). Articles were included if they explored the education, content and/or assessment of First Nations health or cultural safety within the tertiary curricula for health-care students (including allied health, medical, and nursing) or discussed tools to assess cultural safety within this environment. No geographical limitations were set, in order to capture the most diverse range of studies as possible.

Articles were excluded if they focussed on general curriculum design that was not specific to First Nations health; the population was not specifically entry-level tertiary health-care students; or tools used to assess cultural safety were not specific to First Nations cultural safety. Individual case studies or experiences were also excluded.

2.4 | Information sources

Database searches were conducted between September 2021 and October 2021, including CINAHL, InformIT, EBSCO, Scopus, ProQuest, Web of Science, PubMed, and Lowitja. Grey literature and reference lists were also scanned for additional relevant articles. The search strategies were drafted by the lead researcher and further refined through team discussion.

2.5 | Search strategy

Search terms included 'Undergraduate University Health Student', 'Curriculum', 'Cultural Safety', 'Cultural Competence', 'Cultural Awareness', 'Cultural Sensitivity', 'Cultural Responsiveness', 'Cultural Bias', 'Aboriginal and Torres Strait Islander', 'Indigenous', 'First Nation', 'Aboriginal', 'Native Australian', 'Native American', 'Metis', 'Inuit', 'Inuk', 'Maori', 'Culturally Safe

Healthcare', 'Culturally Safe Practice', and 'Culturally Safe Care'. The search terms were grouped into relevant concept areas. An example of the search terms and concept areas is shown in Table S3.

2.6 | Selection of sources of evidence

Papers were screened first by title, then abstracts and then full text. References were exported to Endnote (The EndNote Team, 2013), with references and abstracts extracted and uploaded into Covidence (Veritas Health Innovation, 2022) for review.

The first author reviewed all eligible papers with co-authors reviewing a subsample, with any conflicts resolved through group discussion, whereby a consensus was reached regarding suitability of the paper.

2.7 | Data charting process

The data were extracted from eligible studies, utilising Covidence and recorded in a Microsoft Excel spreadsheet, utilising headings relevant to the proposed research questions. The lead researcher independently extracted and charted the data, with ongoing evaluation and discussions of the criteria by the research team in an iterative process. Any inconsistencies or disagreements were resolved through group discussion and reviewing against the research questions.

2.8 | Data items

The data captured included article characteristics (e.g., author name, year of publication, and geographical location), curriculum delivery (e.g., mode, duration, and location), curriculum content, assessment (e.g., content and cultural safety), and a summary of overall findings. Of particular focus was an exploration of ways First Nations health content has been taught and any consistencies or recommendations noted in the literature regarding best practice.

2.9 | Synthesis of findings

The findings were grouped by settings, population, and intervention type, along with the study design utilised. Literature reviews were charted separately, particularly as they included some of the same studies that were identified within the literature search.

3 | FINDINGS

3.1 | Selection of sources of evidence

Using the combination of identified keywords, 1772 articles were identified. An additional six articles were located through scanning of reference lists and grey literature. After removal of duplicates, a total of 1503 titles and abstracts were screened, and 201 full-text articles were reviewed for eligibility. A total of 28 articles met the eligibility criteria and were included in the review.

The results of the screening process are illustrated in a PRISMA flow diagram (Tricco et al., 2018) in Figure 1.

3.2 | Characteristics of sources of evidence

The information relating to the 28 included studies' place of origin, design, and participants along with curriculum and assessment interventions, and main findings are presented in Table 1 and Table 2. All studies relate to the First Nations peoples of the country in which the paper was published. Papers discussing a curriculum innovation are listed in Table 1, with literature reviews presented in Table 2, utilising a modified charting method. This will allow for ease of contrast and comparison between the two tables and relevant articles.

Each paper has been individually numbered within Tables 1 and 2. These numbers are used to refer to specific studies within the findings.

3.3 | Findings from individual sources of evidence

Table 1 and Table 2 chart the relevant data, in relation to the research questions. Columns 4, 5, and 7 address Question 1, and Column 6 addresses Question 2.

3.4 | Synthesis of findings

There has been an increase in the amount of identified research in this area commencing in 2006 with 60% of papers being published in the 5 years between 2017 and 2021. Studies originated from Australia ($n = 18$), Canada ($n = 2$) and the United States ($n = 2$), New Zealand ($n = 1$), Jordan ($n = 1$), and South Africa ($n = 1$). The undergraduate health degrees being studied by the student population included nursing ($n = 9$), occupational therapy ($n = 9$), midwifery ($n = 7$), dentistry/oral health
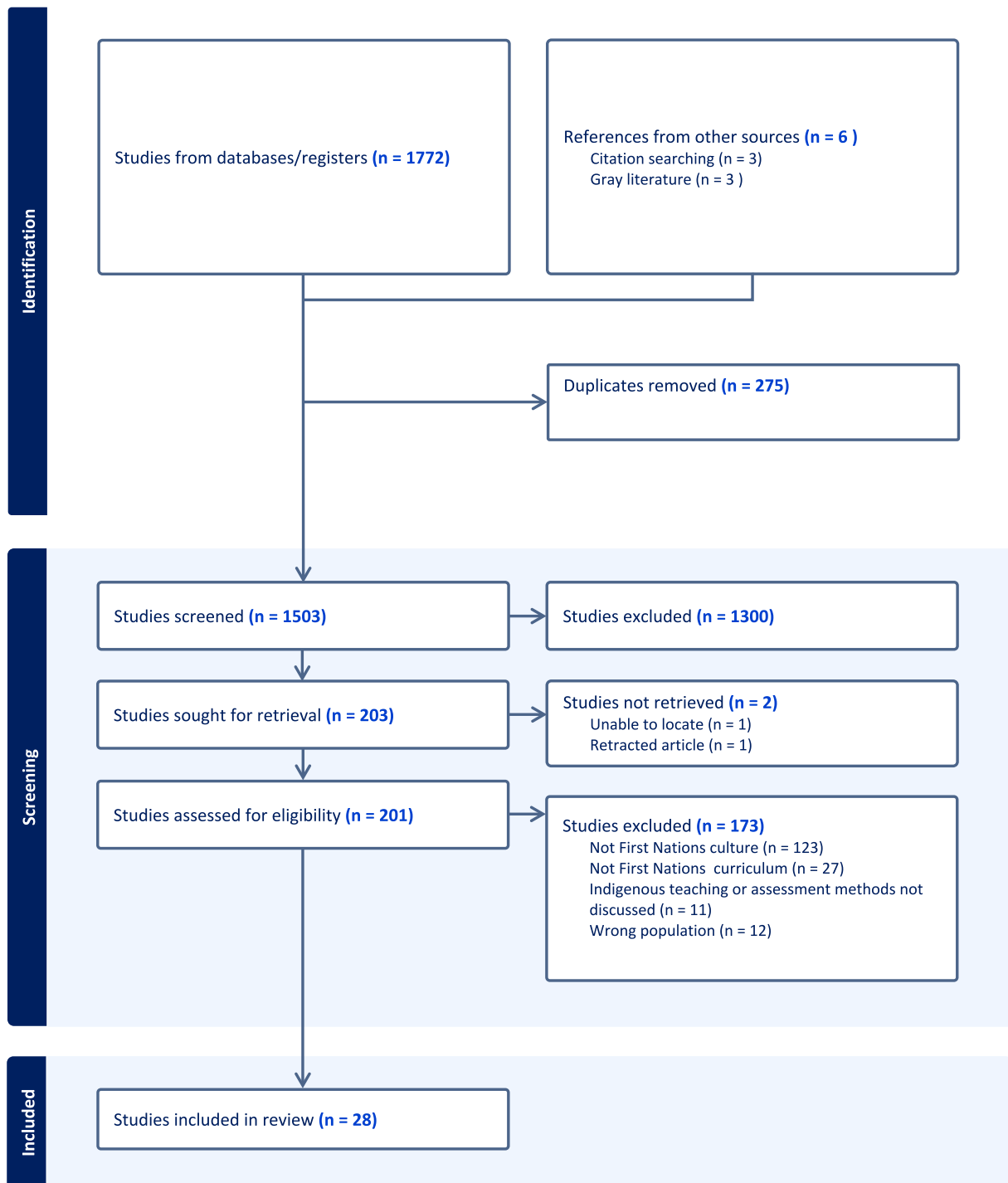
Identification

Studies from databases/registers **(n = 1772)**

References from other sources **(n = 6)**
Citation searching (n = 3)
Gray literature (n = 3)

Duplicates removed **(n = 275)**

Screening

Studies screened **(n = 1503)**

Studies excluded **(n = 1300)**

Studies sought for retrieval **(n = 203)**

Studies not retrieved **(n = 2)**
Unable to locate (n = 1)
Retracted article (n = 1)

Studies assessed for eligibility **(n = 201)**

Studies excluded **(n = 173)**
Not First Nations culture (n = 123)
Not First Nations curriculum (n = 27)
Indigenous teaching or assessment methods not discussed (n = 11)
Wrong population (n = 12)

Included

Studies included in review **(n = 28)**

FIGURE 1 PRISMA flow diagram detailing literature screening process.

($n = 6$), medicine ($n = 5$), nutrition/dietetics ($n = 3$), social work ($n = 2$), physiotherapy ($n = 2$), psychology ($n = 2$), public health ($n = 2$), sports science/exercise physiology ($n = 2$), paramedicine ($n = 1$), chiropractic ($n = 1$), pharmacy ($n = 1$), physiotherapy ($n = 1$), speech therapy ($n = 1$), and other health disciplines ($n = 4$).

Mixed method approaches ($n = 11$) were most commonly used within the papers, followed by qualitative methods ($n = 7$), quantitative methods ($n = 4$), and case studies ($n = 3$). A variety of tools were reported as being used, including surveys ($n = 14$), interviews ($n = 7$), case studies/cohort studies ($n = 4$), focus groups/workshops ($n = 3$), observations ($n = 1$), reflections ($n = 1$), and audits ($n = 1$). The three literature reviews (Table 2) were published between 2018 and 2019, originating from Australia ($n = 2$) and Canada ($n = 1$). Two studies were

TABLE 1 Summary of included studies.

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
1.	Al-Shdayfat et al., 2016 Jordan	Qualitative—focus groups 4th year nursing students, and university academics n = 10 (5 students, 5 academics)	Incorporated across two units of study in 4th year Theory sessions over 6 weeks Practical immersion within Bedouin community twice weekly for 7 weeks	Not reported	(C) Not reported (CS) Not reported	Cultural competency can be achieved by gaining a theoretical understanding before undertaking practical or immersion activities
2.	Amorin-Woods et al., 2021 Australia	Mixed methods—survey Final year chiropractic students n = 64	Compulsory prior to rural placement (face-to-face or online) Face-to-face—2-day cultural awareness workshop • Role play, reflections, traditional cultural practices • Aboriginal presenters Online • Text, audio-visual quizzes	Not reported	(C) Not reported (CS) Not reported	No significant difference between online or face-to-face delivery. However online delivery should not completely replace face-to-face learning
3	Bennett et al., 2018 Australia	Case study— implementing Aboriginal and Torres Strait Islander content into curriculum Social work, speech therapy, public health, occupational therapy, psychology, and exercise physiology courses n = Not reported	Integrated approach Reflective activities, role-playing, experiential learning, and cultural immersion (including work integrated learning)	Diversity of Aboriginal and Torres Strait Islander voices and lived experiences Case studies; history and colonisation; cultural responsivity; culture, race, and ethnicity; privilege and whiteness; critical race theory	(C) Quizzes, oral presentations, case study analysis, reflective essays, and journaling (CS) Not reported	Content needs to constantly adapt and change Academics would benefit from education on Aboriginal and Torres Strait Islander knowledge and ways of communicating. Employment of Aboriginal and Torres Strait Islander staff would be beneficial. A tool to assess student and teacher experiences and cultural responsiveness is needed
4	Flavell et al., 2013 Australia	Mixed methods—survey Nursing and midwifery students n = 748	10 week, compulsory, standalone unit	Cultural spaces and Indigenous identity; terminology; working in Indigenous Australian contexts; history, policies, and practices; contemporary Indigenous Australian contexts; views and issues in health; cross-cultural communication; Indigenous	(C) Not reported (CS) Not reported	A single unit of study has the capacity to contribute towards becoming culturally competent Learning well-received. Partnership between Aboriginal and non-Aboriginal academics to design and deliver content is essential. Academics may lack

(Continues)

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
				health; Indigenous mental health; strategies for effective working relationships		cultural skills, and/or confidence to teach Indigenous content
5	Forsyth et al., 2018 Australia	Quantitative—survey Staff and students within dental and oral health programs n = 260 (69 staff, 191 students)	Integrated throughout the curriculum. Lectures, group discussions, case studies, and reflective writing	Limited	(C) Not reported (CS) Not reported	Insufficient Indigenous content in curricula Careful integration is required, using a combination of pedagogical techniques Evaluation and monitoring are essential to ensure knowledge is translated into professional practice
6	Forsyth et al., 2019a Australia	Qualitative—interviews Academics within dental and oral health programs n = 13	Not reported	Limited	(C) Not reported (CS) Not reported	Insufficient Indigenous content in curricula A combination of face-to-face and online content and integrating and scaffolding content throughout the course is recommended Indigenous presenters, case studies, and reflections are recommended Recommended content includes history, social aspects of health, epidemiology, psychology, prevention, rural/Indigenous health, cultural norms, diversity and multiculturalism, racism, western versus Indigenous values, relationships and communication, population health, and oral health in society Cultural competence is a shared responsibility, and development of strong working relationships will enhance outcomes

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
7	Forsyth et al., 2019b Australia	Qualitative—interviews Third- and fourth-year dental students n = 15	Lectures, Indigenous speakers, cultural immersion/placements Integrated throughout the curricula	Limited	(C) Not reported (CS) Not reported	Insufficient Indigenous content in curricula Improving the cultural competence requires a multifaceted approach, including recruiting Indigenous staff and students; engaging with Indigenous communities; and students' reflection on experiences
8	Gallagher et al., 2019 New Zealand	Qualitative exploratory case study—interviews Final year health professional students— Dentistry, dietetics, medicine, nursing, occupational therapy, pharmacy, and physiotherapy n = 157	Cultural immersion in remote location 5 week program	Indigenous health, inter-professional education	(C) Not reported (CS) Not reported	Learning in large lectures not well received Immersion was powerful, resulting in transformation; however, theory is needed beforehand Learning in an inter-professional environment was beneficial
9	Hendrick et al., 2014 Australia	Qualitative—reflections University academics n = Not reported	Common inter-professional 1st year unit for health-care students 12 × 2 hour workshops Vodcasts, yarning, networking, tutorials, reflections, community member, and professionals input Flexibility with content delivery, based on student needs	Aboriginal and Torres Strait Islander culture and health; worldviews; lived experiences; stereotypes; colonisation/history; diversity	(C) Reflective journal (CS) Not reported	Strengths included an acceptance of various perspectives, a safe space. Critical reflection was beneficial Student transformation observed over 12 weeks
10.	Jamieson et al., 2017 Canada	Mixed methods—survey First-year occupational therapy students n = 27	Embedded within a compulsory first-year unit 3 × 1 hour modules on Aboriginal cultural safety Didactic teaching, sharing of stories and traditions, interactive activities, and reflective discussions	The impact of historical, political, and cultural issues on Indigenous health; connections between past and present government policies/ practices on determinants, access, and outcomes of health; and Indigenous concepts of health and healing; introduction to cultural	(C) Not reported (CS) Self-developed survey	Improvements in perceived and actual knowledge, attitudes, and preparedness for practice Students reported feeling comfortable working with indigenous clients

(Continues)

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
				safety and the health of Indigenous Canadians		Modules may facilitate learning towards cultural safety within the short term
11.	Kamaka, 2010 USA	Qualitative—Focus groups Native Hawaiian patients, physicians, and medical students (2nd and 3rd year) *n* = 48 (34 patients, 10 physicians, and 4 students)	Native Hawaiian problem-based learning cases, scattered through 1st and 2nd year Cultural competency training on placement later in degree (not all students)	Not reported	(C) Not reported (CS) Not reported	Insufficient Native Hawaiian cultural content in curricula Development of curriculum can be challenging. Focus groups can be useful in designing content Multiple teaching methodologies and modalities should be utilised, including case studies, lectures, reflection, and placements/cultural immersion. Adequate preparation required prior to cultural immersion. Repeat exposure to content is needed, along with inclusion on exams Content should include traditional/alternate medicine, customer service, respect and caring, interpersonal skills, thoroughness of care, costs, education on local culture, and involve family in care Cultural training should be undertaken by both students and staff
12.	Lewis & Prunuske, 2017 USA	Mixed methods—survey First- and second-year medical students, faculty, and community members/experts in Indigenous health *n* = 29	As a result of study 7-hour block of Indigenous lectures in first year Taught by Indigenous faculty	History of Indigenous people; sovereignty and politics; Indigenous identity; local culture and spirituality; history of medical racism; Indian Health Service; strategies for working with Indigenous populations	(C) Not reported (CS) Not reported	Indigenous health curriculum not developed. Study led to integration of content Content should include Indigenous history and culture cultural sensitivity, Indigenous ways of healing, obligations, and

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
		(18 Faculty, 5 students, 4 faculty from another institute, 2 medical/ health practitioners)				communications with Indigenous governments A tailored curriculum to the local population may be more effective than a generic module
13.	McCartan et al., 2020 Australia	Quantitative—survey First-year nutrition students $n = 52$ (baseline/T1) $n = 35$ (follow up/T2)	Various activities integrated across first year Activities align with the learning domains of the framework Includes lectures, tutorials, and case studies	Introduction to culture; history and colonisation; social justice and advocacy; mnemonics; Aboriginal food and health different approaches to illness; racism; social determinants of health; Aboriginal health professionals; traditional Aboriginal foods	(C) 6 assessment tasks—aligned to learning domains of the framework. Oral presentations, reflections, essays (CS) cultural capability measurement tool (CCMT)	Students commence with varying experiences and knowledge with Aboriginal people, which needs to be acknowledged Results showed an increase in overall self-rated (cultural capability) scores post content
14.	Melchert et al., 2016 Australia	Mixed methods—Survey and interviews Academic staff teaching into the occupational therapy curriculum Survey $n = 21$ Follow up interviews $n = 5$	10 undergraduate subjects across 4 years included Indigenous content Content also identified in placements but was variable Taught via discussion, case studies, tutorials, and lectures	Culture self and diversity; population health; models of health care; Indigenous history; clinical presentations, and disease; Indigenous societies and cultures	(C) Not reported (CS) Not reported	Appropriate Indigenous content, however, requires greater integration throughout the curriculum Experiential learning experiences would be beneficial and allow for self-reflection There is a lack of consistency, and a lack of evaluation of curricula effectiveness Educators lack confidence and competence with Indigenous knowledge Partnering with Indigenous peoples and utilising various learning experiences (such as immersion) should be considered
15.	Ngunyulu et al., 2020 South Africa	Qualitative—Workshop/ discussion/focus group	Minimal content within the curriculum	Not reported	(C) Not reported (CS) Not reported	Insufficient African traditional indigenous knowledge content in curricula

(Continues)

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
		Final year nursing students, academic staff, health professionals $n = 45$ (39 students, 3 staff, 3 health professionals)				Current approaches are theoretical and students unable to apply Recommended content should include decolonisation of health-care sciences curriculum, including African history and knowledge systems, traditional healing practices, and African philosophies Institutional resistance to curriculum reform. Need to recognise and integrate both western medicine and traditional methods equally
16.	Paul et al., 2006 Australia	Mixed methods—survey Final year medical students 184 participants, across 3 data collection points $n = 181$ (IAHUC survey) $n = 65$ (open-ended statements) $n = 184$ (preparedness for practice survey—Include interns)	Integrated across whole of course Seminars, guest lectures, problem-based tutorials, self-directed learning, and clinical placement Minimum 37 hours direct teaching. >150 hours total teaching	Historical, cultural, and social factors around Aboriginal and Torres Strait Islander peoples' health and health care; health and health-care issues for Aboriginal and Torres Strait Islander peoples; working in partnership with Aboriginal and Torres Strait Islander peoples; Sociocultural context of health for Aboriginal and Torres Strait Islander peoples; multidisciplinary health care and health services for Aboriginal and Torres Strait Islander people	(C) Not reported (CS) Not reported	Significant changes observed in perceived knowledge, skills, and attitudes Immersion is not necessary Keys to success include integrating the material, involving Aboriginal people in planning and provision of teaching, and drawing on the skill and experience of the teachers
17.	Rowan et al., 2013 Canada	Mixed methods—Survey and interview Various nursing schools $n = 38$ (survey $n = 36$, interviews $n = 12$)	Case studies, other learning resources, placements, presentations, and workshops Curriculum built around a common thread, weaving, levelling, or imbedding	Concepts of cultural competency and cultural safety	(C) Not reported (CS) Not reported	No one approach was more effective than another Local and/or Aboriginal knowledge systems should be considered and included

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
						Integration of cultural content into curricula can result in increased understanding and knowledge. Many tools to assess cultural safety lack rigour. A mixed method approach of evaluation may be best.
18.	Ryder et al., 2019 Australia	Pilot study—develop and validate a questionnaire Undergraduate medical students, post-graduate physiotherapy and occupational therapy students, clinical and academic staff/content experts Development of questionnaire: $n = 5$ (staff/content experts) Validating questionnaire: $n = 40$ (22 medical students, 9 physiotherapy and occupational therapy students, 9 staff)	Not reported Participants had not undertaken any prior education in Aboriginal health or cultural safety during within this degree	Not reported	(C) Not reported (CS) Questionnaire	Students commence university with varying life and work experiences, which impact on their understanding, self-awareness and skills Good reliability of the tool obtained. Tool will be refined with further large-scale trials to strengthen the validity and reliability measures of the questionnaire Future testing to be undertaken. With greater diversity in each of the subgroups, including collection of education levels and experience with Aboriginal health and cultural safety
19.	Sullivan & Sharman, 2011 Australia	Descriptive report/case study Third-year psychology students $n = 156$	Embedded content into compulsory core unit Tutorials, online content, case studies, external resource links A 'virtual reality' health-care service. Background information on a hypothetical client. Videotaped (culturally insensitive) interview between with a client	Links to cultural resources; communication with Aboriginal clients	(C) Interactive web-based multimedia (WBMM) tool and case-based scenarios (CS) Not reported	Adapting an applied assessment to embed cultural learnings can be achieved, engaging students and triggering discussions >98% of participants incorporated the impact of the client's culture on both the clinical reasoning process and the outcome

(Continues)

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
20.	Thackrah & Thompson, 2013 Australia	Mixed methods—Observations, surveys, interviews First-year midwifery students $n = 16$ 16 (pre-unit questionnaire) 15 (pre- and post-unit questionnaire)	Compulsory, discrete unit Weekly 2-hour tutorial over 12 weeks Vodcast, discussions, case studies, student presentations	Diversity within communities; international comparisons; family structure; past policies and practices; beliefs in health contexts and specific professional practice issues	(C) Computer-based e-tests, group presentation and reflective journal (CS) Not reported	Content needs to extend beyond one unit, and be integrated throughout the program, particularly in clinical settings whereby theory can be applied A variety of emotional responses were experienced by students Positive changes in perceptions are not necessarily accompanied by increased confidence working with Aboriginal people in health-care settings Teaching to be undertaken by both Aboriginal and non-Aboriginal staff
21.	Thackrah et al., 2015 Australia	Mixed methods—survey First-, second- and third-year midwifery students $n = 44$	Compulsory, discrete unit Weekly 2-hour tutorial over 12 weeks Vodcasts, discussions, case studies, and student presentations	Diversity within Aboriginal communities and international comparisons; past policies and practices; social determinants of health, family structures and responsibilities; cultural health beliefs and professional practice issues; emphasis on the recipients of care and the importance of Aboriginal cultural values in health service delivery	(C) Student presentations, online quizzes, and reflective journal (CS) Survey developed on student knowledge and attitudes towards Aboriginal people	More discipline-specific content and integration on Aboriginal health and clinical placements in Aboriginal settings is required Vertical integration is necessary to consolidate knowledge and change in attitude Knowledge was significantly greater after completion of the unit. A decline in knowledge observed in subsequent years
22.	West et al., 2017 Australia	Quantitative—Survey—Descriptive, cohort study Third-year midwifery students $n = 38$ (pre), 15 (post)	Discrete First Peoples health course 2 days intensive	Not reported	(C) Not reported (CS) Cultural capability measurement tool (CCMT)	Discrete course enhanced cultural capabilities. Vertical and horizontal scaffolding throughout the curricula is required to sustain changes A significant increase in cultural capability scores was observed after intervention

TABLE 1 (Continued)

#	Author, year, country	Article: method, participants, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
						Further validation of tool to assess cultural capability is required with large cohorts of students
23.	West et al., 2018 Australia	Quantitative—descriptive cohort study, survey Health professional students n = 418	First Peoples health course Discrete, compulsory 12 week course aligned with aboriginal and Torres Strait Islander health curriculum framework	Not reported	(C) Not reported (CS) cultural understanding self-assessment tool (CUSAT); cultural capability measurement tool (CCMT)	The CCMT was found to be reliable and valid. It reflects the capabilities identified within the framework. Correlation between CCMT and CUSAT scores. Longitudinal research needed to assess students' knowledge, attitudes, and views over time
24.	West et al., 2019 Australia	Mixed methods—Survey Health professional students n = 87	12 week, discrete course on First Peoples health. First People's pedagogies—story sharing, maps, non-verbal symbols and images, deconstruction and reconstruction of information, land links, non-linear approaches, and community links. Mixed mode, using 5 × 3-hour face-to-face workshops and approximately 10 hours of self-directed learning using online mini lectures and resources	Attitudes, values, skills, and knowledge underpinning cultural capability	(C) Group assessment—critically analyse historical policies and influence on First Peoples health. Online quiz. Analysis and critical reflection (CS) cultural capability measurement tool (CCMT)—pre- and post-course	Content needs to extend beyond one unit and be carefully integrated throughout the program. The significant increase in scores is promising for improving cultural capability. Unresolved issues such as guilt or anger should be addressed. Collaborative engagement and partnership with a First Peoples community would enhance quality and student experience
25.	Zimmerman et al., 2019 Australia	Mixed methods—Audit, survey, interview Course Convenors within the School of Nursing and Midwifery nursing program n = 10 (online survey) n = 12 (semi-structured interviews)	Content introduced in first year and then not again until the final year, as a discreet course	Cultural knowledge; diversity; culturally safe communication; Partnerships; Clinical presentation; Population health; Culturally safe health care; Equity and Human Rights; Leadership	(C) Content assessed against the 'framework' (CS) not reported	Content is fragmented, inconsistent and insufficient to prepare students to work in a culturally capable manner. Opportunities exist to embed and increase the aboriginal and Torres Strait Islander people's content into the curricular

TABLE 2 Summary of included literature reviews.

#	Author, year, country	Article: description, inclusion criteria, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
26.	Francis-Cracknell et al., 2019 Australia	Systematic literature review Undergraduate/entry Level health professional learners; Indigenous health teaching and learning activities and; measured change in learning; published in English n = 17 articles	Various teaching methods used: Face-to-face (n = 12) Blended face-to-face and Indigenous placement (n = 2) Digital learning (n = 1)	Content of Indigenous health teaching and learning varied widely and some studies were more comprehensive than others	(C) The majority of studies captured perceived learning rather than assessment of actual competency (CS) Many assessment tools utilised, most were not standardised	Teaching focussed on learning and remembering, rather than application. Limited teaching and learning research of whole curriculum programs Studies focussed on a specific unit rather than overall preparedness of graduates to work in Indigenous health Educators do not feel well-prepared to teach Indigenous content
27	Kurtz et al., 2018 Canada	Literature review Program geared towards developing culturally competent practitioners who work specifically with Indigenous populations; and program was based in a post-secondary institution with either undergraduate or graduate degree health-care or social services students as the principal participants; published in English; 1996–2016 n = 40 articles	A broad range of teaching method used Classroom instruction and placement most common methods used. Online learning also utilised Duration and depth of curricular ranged from 1 day to integration across a 6-year program	Not reported	(C) Not reported (CS) the development of comprehensive tools to measure the experience of culturally safe practice is difficult, as variables that influence outcomes are dependent on multifaceted contexts	Cultural safety education and application were shown to be linked to improved relationships, healthier outcomes, and increased number of Indigenous people entering health education programs and graduates interested in working in diverse communities Collaborative partnerships with Indigenous people are key for successful program delivery and sustainability Culturally appropriate principles and practices cannot be generalised and should be considered at a local level
28.	Mills et al., 2018 Australia	Systematic integrative literature review Indigenous health education provided to university students, with a focus on Indigenous populations of Australia, New	Significant variability in how content is taught and integrated Discrete units (n = 9) Modules within a unit (n = 2) Full day workshop (n = 1)	Included historical, political, and social aspects of Indigenous health, contemporary health care, social determinants, cultural competency and safety, racism,	(C) Group activities Online quizzes Reflective journals (CS) Clinical cultural competency questionnaire (CCCQ)	Careful integration of content throughout programs is essential if changes in knowledge and attitudes are to be sustained

TABLE 2 (Continued)

#	Author, year, country	Article: description, inclusion criteria, sample size	Curriculum delivery approach: mode, duration, location	Curriculum content themes	Assessment of competency: Content (C) Cultural safety (CS)	Outcomes
		Zealand, Canada, and the United States; published in English; 2007–2017 n = 12 articles	Compulsory (n = 11) Face-to-face tutorials and lectures, interactive sessions, personal and community stories, autobiography, online, vodcasts, interactive activities, reflections, cultural awareness activities, case studies, presentations Length and duration varied from 1 day to 13 weeks	equity, access, cultural health beliefs, and issues		In order to develop health students who are culturally capable, valid, rigorous evaluation tools specific to the Indigenous health context are required

listed as being systematic literature reviews. These three reviews focussed on the impact of First Nations health-care curriculum on entry-level health professional learners; cultural safety education within post-secondary health science programs; and the experiences and outcomes of health professional students when undertaking education on First Nations health.

3.4.1 | Delivery of First Nations content in the curriculum

The approach taken with delivery of content varied greatly between the studies, including the mode, duration, and how it was incorporated into the curricula. Many of the studies (n = 9) (Forsyth et al., 2018; Forsyth et al., 2019a; Forsyth et al., 2019b; Kamaka, 2010; Lewis & Prunuske, 2017; Melchert et al., 2016; Ngunyulu et al., 2020; Thackrah et al., 2015; Zimmerman et al., 2019) highlighted that greater information on First Nations health is required within their curricula. One study reported not having any specific content at all (Ngunyulu et al., 2020). Many studies (n = 16) reported using Indigenous pedagogies when designing the curriculum (Amorin-Woods et al., 2021; Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2019a; Forsyth et al., 2019b; Hendrick et al., 2014; Jamieson et al., 2017; Lewis & Prunuske, 2017; Melchert et al., 2016; Ngunyulu et al., 2020; Rowan et al., 2013; Ryder et al., 2019; Thackrah & Thompson, 2013; West et al., 2017; West et al., 2018; West et al., 2019).

3.4.2 | Mode of delivery

Not all studies reported on delivery modes. When reported, face-to-face (n = 15) (Al-Shdayfat et al., 2016; Amorin-Woods et al., 2021; Bennett et al., 2018; Forsyth et al., 2018; Forsyth et al., 2019b; Hendrick et al., 2014; Kamaka, 2010; Lewis & Prunuske, 2017; McCartan et al., 2020; Paul et al., 2006; Rowan et al., 2013; Sullivan & Sharman, 2011; Thackrah & Thompson, 2013; Thackrah et al., 2015; West et al., 2019), work integrated learning/cultural immersion (n = 9) (Al-Shdayfat et al., 2016; Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2018; Forsyth et al., 2019b; Gallagher et al., 2019; Kamaka, 2010; Rowan et al., 2013; Zimmerman et al., 2019), and self-directed/online (n = 5) (Amorin-Woods et al., 2021; Paul et al., 2006; Sullivan & Sharman, 2011; Thackrah & Thompson, 2013; West et al., 2019) activities were identified. Many studies (n = 11) (Al-Shdayfat et al., 2016; Amorin-Woods et al., 2021; Bennett et al., 2018; Forsyth et al., 2018; Forsyth

et al., 2019b; Kamaka, 2010; Paul et al., 2006; Rowan et al., 2013; Sullivan & Sharman, 2011; Thackrah & Thompson, 2013; West et al., 2019) reported a combination of modes utilised. Within this context tutorials, workshops or group discussions ($n = 14$) (Amorin-Woods et al., 2021; Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2018; Hendrick et al., 2014; Jamieson et al., 2017; McCartan et al., 2020; Melchert et al., 2016; Paul et al., 2006; Rowan et al., 2013; Sullivan & Sharman, 2011; Thackrah & Thompson, 2013; Thackrah et al., 2015; West et al., 2019), were the most common methods of delivery, followed by lectures, seminars, or presentations ($n = 12$) (Al-Shdayfat et al., 2016; Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2018; Forsyth et al., 2019b; Gallagher et al., 2019; Lewis & Prunuske, 2017; McCartan et al., 2020; Melchert et al., 2016; Paul et al., 2006; Rowan et al., 2013; West et al., 2019). Some of the most common learning activities reported were involvement of First Nations peoples and traditional cultural activities ($n = 14$) (Amorin-Woods et al., 2021; Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2019b; Gallagher et al., 2019; Hendrick et al., 2014; Jamieson et al., 2017; Lewis & Prunuske, 2017; Paul et al., Paul et al., 2006; Rowan et al., 2013; Sullivan & Sharman, 2011; Thackrah & Thompson, 2013; Thackrah et al., 2015; West et al., 2019), case studies ($n = 11$) (Bennett et al., 2018; Forsyth et al., 2018; Jamieson et al., 2017; Kamaka, 2010; McCartan et al., 2020; Melchert et al., 2016; Paul et al., 2006; Rowan et al., 2013; Sullivan & Sharman, 2011; Thackrah & Thompson, 2013; Thackrah et al., 2015), and reflective activities ($n = 11$) (Amorin-Woods et al., 2021; Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2018; Hendrick et al., 2014; Jamieson et al., 2017; McCartan et al., 2020; Rowan et al., 2013; Thackrah & Thompson, 2013; West et al., 2019; Zimmerman et al., 2019).

3.5 | Duration

The length and duration of content delivery was not always reported. When reported, the total hours of content ranged from 3 to in excess of 150 hours. Those studies that included duration reported between 3 hours to 2 days ($n = 3$), weekly for 5–7 weeks ($n = 2$), weekly for 10–12 weeks ($n = 6$), and >150 hours ($n = 1$).

3.6 | Location within program

The subject matter was incorporated at various times throughout the tertiary health programs, including a one

off/discrete unit ($n = 6$), embedded throughout the degree ($n = 4$), incorporated in first year only ($n = 3$), across two separate years of study ($n = 3$), prior to placement ($n = 1$), or within the final year of study ($n = 1$). Six studies reported that the content was within a compulsory unit of study.

3.7 | Content themes

There was more consistency with regard to the subject matter delivered, including history, colonisation, policies, and practices ($n = 13$) (Amorin-Woods et al., 2021; Flavell et al., 2013; Forsyth et al., 2018; Hendrick et al., 2014; Jamieson et al., 2017; Kamaka, 2010; Lewis & Prunuske, 2017; McCartan et al., 2020; Paul et al., 2006; Thackrah & Thompson, 2013; Thackrah et al., 2015; West et al., 2019; Zimmerman et al., 2019); cultural awareness/safety/responsivity and/or culturally safe practice ($n = 12$) (Amorin-Woods et al., 2021; Bennett et al., 2018; Forsyth et al., 2018; Hendrick et al., 2014; Jamieson et al., 2017; McCartan et al., 2020; Ngunyulu et al., 2020; Paul et al., 2006; Rowan et al., 2013; Thackrah & Thompson, 2013; West et al., 2019; Zimmerman et al., 2019); First Nations culture and health ($n = 11$) (Flavell et al., 2013; Forsyth et al., 2018; Gallagher et al., 2019; Hendrick et al., 2014; Jamieson et al., 2017; Lewis & Prunuske, 2017; McCartan et al., 2020; Paul et al., 2006; Thackrah et al., 2015; West et al., 2019; Zimmerman et al., 2019); First Nations health-care service, models of care, and First Nations health professionals ($n = 10$) (Flavell et al., 2013; Gallagher et al., 2019; Jamieson et al., 2017; Kamaka, 2010; Lewis & Prunuske, 2017; McCartan et al., 2020; Paul et al., 2006; Thackrah & Thompson, 2013; Thackrah et al., 2015; Zimmerman et al., 2019); racism, privilege, and critical race theory ($n = 8$) (Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2018; Kamaka, 2010; Lewis & Prunuske, 2017; McCartan et al., 2020; West et al., 2019; Zimmerman et al., 2019); identity and diversity ($n = 7$) (Bennett et al., 2018; Flavell et al., 2013; Hendrick et al., 2014; McCartan et al., 2020; Ngunyulu et al., 2020; Thackrah & Thompson, 2013; Zimmerman et al., 2019); social/cultural determinants of health ($n = 7$) (Flavell et al., 2013; Jamieson et al., 2017; Lewis & Prunuske, 2017; McCartan et al., 2020; Paul et al., 2006; Thackrah et al., 2015; Zimmerman et al., 2019); cross-cultural/safe communication ($n = 7$) (Forsyth et al., 2018; Jamieson et al., 2017; Lewis & Prunuske, 2017; McCartan et al., 2020; Paul et al., 2006; Thackrah et al., 2015; Zimmerman et al., 2019); and First Nations concepts of health and healing ($n = 7$) (Bennett et al., 2018; Jamieson et al., 2017; Ngunyulu et al., 2020; Paul et al., 2006; Thackrah &

Thompson, 2013; Thackrah et al., 2015; Zimmerman et al., 2019). Other topics reported included race and ethnicity (Amorin-Woods et al., 2021; Bennett et al., 2018; Kamaka, 2010; McCartan et al., 2020; Zimmerman et al., 2019), clinical presentations and disease (Flavell et al., 2013; Forsyth et al., 2019b; McCartan et al., 2020; Sullivan & Sharman, 2011; Zimmerman et al., 2019), partnerships and working relationships (Flavell et al., 2013; Kamaka, 2010; Paul et al., 2006; Zimmerman et al., 2019), working in First Nations contexts (Bennett et al., 2018; Flavell et al., 2013; Kamaka, 2010; McCartan et al., 2020), social justice (Bennett et al., 2018; Lewis & Prunuske, 2017; McCartan et al., 2020; Zimmerman et al., 2019), lived experiences (Bennett et al., 2018; Flavell et al., 2013; Hendrick et al., 2014), worldviews and stereotypes (Hendrick et al., 2014; McCartan et al., 2020), traditional foods (Lewis & Prunuske, 2017; McCartan et al., 2020), family (Thackrah & Thompson, 2013; Thackrah et al., 2015), and spirituality (Kamaka, 2010).

These findings from the studies listed in Table 1 correlate closely to the findings from the literature reviews summarised in in Table 2, with all three literature reviews reporting that a broad range of teaching methods for First Nations health content was incorporated at different times throughout the various health programs and for varying lengths of time.

3.7.1 | Assessment of competency: First Nations content

Many articles ($n = 18$) did not report the assessment methods employed. When included, assessments were reported to be undertaken individually or as part of a group submission. The most frequently reported assessment methods included reflection or journaling ($n = 5$) (Bennett et al., 2018; Hendrick et al., 2014; Thackrah & Thompson, 2013; Thackrah et al., 2015; West et al., 2018); quiz ($n = 5$) (Amorin-Woods et al., 2021; Bennett et al., 2018; Thackrah & Thompson, 2013; Thackrah et al., 2015; West et al., 2019); case-based scenarios, analysis, or essay ($n = 4$) (Amorin-Woods et al., 2021; Bennett et al., 2018; Sullivan & Sharman, 2011; West et al., 2019); oral presentation ($n = 4$) (Bennett et al., 2018; McCartan et al., 2020; Thackrah & Thompson, 2013; Thackrah et al., 2015); and interactive online tool ($n = 1$) (Sullivan & Sharman, 2011). Five studies (McCartan et al., 2020; West et al., 2017; West et al., 2018; West et al., 2019; Zimmerman et al., 2019) indicated that the assessment tasks were mapped to the Framework.

The literature reviews presented in Table 2 similarly highlights a broad range of assessment methods, including group activities, quizzes, and reflective journals.

3.7.2 | Assessment of competency: cultural safety

Few studies reported assessing the knowledge and capability of students with regard to cultural safety ($n = 9$). Where described, the tools utilised included the development of a specialised survey ($n = 5$) (Jamieson et al., 2017; Paul et al., 2006; Rowan et al., 2013; Ryder et al., 2019; Thackrah et al., 2015), cultural capability measurement tool (West et al., 2017; West et al., 2018; West et al., 2019) ($n = 4$) (McCartan et al., 2020; West et al., 2017; West et al., 2018; West et al., 2019); or cultural understanding self-assessment tool (West et al., 2018) ($n = 1$) (West et al., 2019).

These findings were consistent with the literature reviews presented in Table 2, which showed that there are various methods and tools utilised for evaluating self-perceived knowledge and attitudes but not the direct assessment of the ability to work in a cultural safety manner with First Nations peoples. The literature highlighted that there is not one consistent method for evaluating the ability to measure culturally safe practice, as variables that influence outcomes are dependent on numerous circumstances (Kurtz et al., 2018). Many of the tools utilised were non-standardised, with some being developed ad hoc in response to not being able to identify a suitable tool (Francis-Cracknell et al., 2019; Kurtz et al., 2018; Mills et al., 2018).

A profile of the above findings for each individual study is represented in Table S4.

3.7.3 | Other themes

Other recurring themes within the literature include incorporation of Indigenous pedagogies, approaches with integration of material across the curriculum, appropriate personnel to deliver subject matter, protocols and knowledge, the importance of collaboration with and the building of relationships with Elders and First Nations communities, and the impact of curriculum on future health-care practices, barriers, and recommendations for future research. This data are represented in the Table S5.

4 | DISCUSSION

This review aimed to investigate how information on First Nations health and/or cultural safety is delivered and assessed within the tertiary sector for health-care students. The methods and collaborations with First Nations leaders described by the various authors and institutions

as they attempt to incorporate relevant First Nations content into their curriculum should be applauded, as much of this has occurred over a relatively short period of time. While this subject matter now appears to be included in many undergraduate health degrees, especially within Australia, the approach taken by each program to deliver and assess this content varies considerably and has been inconsistent to date (Commonwealth of Australia, 2014; Mills et al., 2018; West et al., 2019).

Occupational therapy and nursing were the most frequently identified programs that are incorporating First Nations content within their curriculum. Within Australian, both of these programs have accreditation standards set by their national boards, including the requirements that programs of study must address the provision of culturally appropriate health care for Aboriginal and Torres Strait Islander peoples (Nursing and Midwifery Board of Australia, 2016; Occupational Therapy Board of Australia, 2018). The occupational therapy competencies explicitly emphasise the need for therapists to enhance their capabilities for practice with Aboriginal and Torres Strait Islander peoples. This review highlights that many occupational therapy undergraduate programs are modifying their curriculum to meet this requirement.

Designing an appropriate curriculum can be challenging (Kamaka, 2010). A wide range of methods for incorporating this information into the curriculum were reported, mostly focussing on educational at the level of knowledge and understand with some application according to the Taxonomy of Educational Objectives (Bloom et al., 1956; Krathwohl et al., 2001). While most studies utilised a combination of face-to-face and online delivery methods, there was considerable variability in how this was integrated, ranging from single discrete standalone theory-based workshops or units of study to integration at key points throughout the entire curriculum. Cultural immersion activities were similarly noted, with several studies reporting that immersion and experiential activities are invaluable; however, theoretical education should be completed beforehand in order to fully appreciate the experience (Al-Shdayfat et al., 2016; Gallagher et al., 2019; Kamaka, 2010). While there is no consensus regarding the most effective delivery method, it is argued that a more structured and integrated approach across the curriculum is required in order to facilitate and sustain understanding and change in clinical practice (Thackrah et al., 2015; Thackrah & Thompson, 2013; West et al., 2017; West et al., 2019).

There was greater consistency regarding the subject matter that was delivered, with the majority of the studies, including information on history, and First Nations culture and health. Likewise, health-care topics such as First Nations health-care models, communication, cultural safety, and working in First Nations contexts were mentioned in several studies.

The importance of incorporating Indigenous pedagogical approaches, such as reflective activities, storytelling, privileging First Nations voices, First Nations teaching staff, and traditional cultural activities were discussed in many of the studies (Bennett et al., 2018; Flavell et al., 2013; Forsyth et al., 2018; Forsyth et al., 2019a, 2019b; Hendrick et al., 2014; Jamieson et al., 2017; Kamaka, 2010; Lewis & Prunuske, 2017; Melchert et al., 2016; Paul et al., 2006; Rowan et al., 2013; Thackrah & Thompson, 2013; West et al., 2019). This highlights that designing an appropriate Indigenous curriculum is more complex than purely the content being taught and requires careful planning and collaboration with First Nations peoples, along with an understanding of this unique culture and knowledge.

Some of the Australian studies indicated that content was guided by the Aboriginal and Torres Strait Islander Health Curriculum Framework; however, this was not consistently used. Although the Framework has been designed specifically for Australian universities (Commonwealth of Australia, 2014), many of the content themes arising from the literature, including studies published outside of Australia, or prior to the development of the Framework, are able to be matched to the key descriptors within the Framework. Table S6 maps the identified content themes to the Framework.

Using an educational taxonomy such as Bloom's (Krathwohl et al., 2001) whereby specific learning and assessment outcomes could be categorised and graded may also be an effective way for tertiary education institutions to ensure that students have gained a basic understanding of concepts related to cultural safety, before progressing towards more advanced skills required as an entry-level health practitioner. None of the studies identified using this taxonomy; however, the Framework, which was used to guide several Australian studies, was informed by Bloom's taxonomy (Commonwealth of Australia, 2014).

Many of the papers did not discuss how knowledge acquisition was assessed; however, it appears that the approaches that have been utilised are similar to common assessment methods for many university subjects (e.g., essay, quiz, and oral presentations), with the exception of reflective activities and journaling, which were mentioned within five studies (Bennett et al., 2018; Hendrick et al., 2014; Thackrah et al., 2015; Thackrah & Thompson, 2013; West et al., 2019).

There is limited research regarding the effectiveness of such education and how best to assess the ability of graduate health professionals to provide culturally safe

health-care services (Mills et al., 2018; Ryder et al., 2019; West et al., 2017). Various tools are being used to assess cultural knowledge; however, they are usually not specific to First Peoples (West et al., 2017). In recent years, tools to measure cultural capability have been developed in Australia, in particular the 'Cultural Capability Measurement Tool' (West et al., 2017; West et al., 2018); and a questionnaire to measure attitude change and the effectiveness of Aboriginal health and cultural safety curriculum, based on the principles of cultural safety (Ryder et al., 2019). Both tools have been utilised as pre-post assessment of learning outcomes to demonstrate that students who complete First Nations health subjects as part of their degree program display an increase in cultural capability. It has also been suggested that utilising a mixed method approach to assess an individual's cultural capability may provide a more robust and holistic approach (Calvillo et al., 2009; Rowan et al. (2013).

An increase in knowledge alone does not necessarily result in an increase in the ability to work in a manner that is deemed to be culturally safe by First Nations peoples (Forsyth et al., 2018; Thackrah et al., 2015; Thackrah & Thompson, 2013; West et al., 2017; West et al., 2018). While many studies demonstrated that the level of knowledge and/or attitudes towards First Nations peoples improved after completion of First Nations focussed units, it is unclear how this translates into students being able to work in a culturally safe manner with First Nations peoples post-graduation, with further research into this area needed (Jamieson et al., 2017; Thackrah & Thompson, 2013; West et al., 2018; West et al., 2019).

Other themes arising from the review highlight that increasing First Nations content in the curricula has implications for academics as well as students. It has been recommended that developing effective working relationships with First Nations peoples and collaborating to develop and deliver the curriculum is best practice (Forsyth et al., 2019a; Paul et al., 2006; West et al., 2019). While it may be ideal for students to learn about First Nations peoples from First Nations academics and community members, this is not always feasible. Many non-Indigenous academics report feeling under prepared, lack cultural skills, or do not feel confident to teach this information (Flavell et al., 2013; Melchert et al., 2016). University curricula are crowded and require careful consideration and planning to appropriately integrate new learning opportunities, especially across an entire curriculum (Forsyth et al., 2018). Students commence university with a wide range of experiences and understanding of Aboriginal people and culture, which should be acknowledged (McCartan et al., 2020; Ryder et al., 2019).

The limitations of this review need to be considered. Only peer-reviewed studies published in English were considered. Authors were not contacted for additional information. Indigenous pedagogies were not fully explored nor used within the search strategy. The study did not look at service provision by graduate health-care professionals within this area.

This is an emergent area of scholarly enquiry, with several questions remaining. There are repeated recommendations for longitudinal studies to demonstrate the continued change in students understanding and practice over time, extending into graduate health professional practice (McCartan et al., 2020; Mills et al., 2018; Rowan et al., 2013; Thackrah et al., 2015). This research may provide relevant information to tertiary health-care programs as they review and integrate various learning opportunities on First Nations health and cultural safety into their curricula.

Further research should focus on effective pedogeological methods, what Indigenising a health professional curriculum might look like, the challenges of incorporating First Nations pedagogies and knowledges into a western model of teaching and learning, and how to accurately assess the ability to practice in a cultural safety manner. Research into who is qualified to teach this content, including any cultural background, experience, training, or expertise would furthermore be of benefit. Finally, research is required into the impact of curriculum and pedagogy in this area on the actual clinical practice of health-care professionals after graduation and ultimately the health and wellbeing of First Nations populations.

5 | CONCLUSION

Over recent years many tertiary institutions have attempted to incorporate information on First Nations health in undergraduate health-care degrees, including occupational therapy. There is some consistency in the curriculum content; however, the programs vary widely with regard to how the curriculum is designed, delivered, integrated, and assessed, by whom and over what duration. There is limited research regarding how knowledge and understanding of cultural safety can be effectively assessed, and whether the fundamental assumptions regarding the impact of these curriculum innovations on the professional practice of health graduates and the health of First Nations people can be substantiated empirically.

AUTHOR CONTRIBUTIONS

the protocol. All authors contributed to the preparation of the manuscript. Consensus and accountability on the final document was provided by all authors.

CONFLICT OF INTEREST STATEMENT

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.