

Systematic review

Do indigenous health curricula in health science education reduce disparities in health care outcomes?

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Indigenous health curricula are a mandated accreditation requirement in many health science courses in Australia and New Zealand, most explicitly in basic medical education¹ and dental education programs.² Indigenous health curricula have been in place in some health science courses for at least a decade, while many others are just developing this aspect. However, it is unclear what impacts such changes in health science education are having (if any) on health outcomes for indigenous peoples. As an emerging discipline, educational approaches and pedagogies are evolving, as are evaluation methods.

Methods

To determine the documented impacts of including indigenous health curricula in health science courses, we conducted a systematic review of published literature related to university indigenous health curricula. The following databases were searched between March and October 2011: Australasian Medical Index, ATSIhealth (Aboriginal and Torres Strait Islander Health Bibliography), CINAHL PLUS, MEDLINE, SCOPUS version 4, and Web of Science. The keyword search "Indigenous AND health AND curricula* AND university" yielded 1247 results. The more refined search of "University AND (Indigenous OR Aboriginal OR Maori OR Native American OR American Indian OR Alaska Native OR Native Hawaiian OR First Nation OR Metis OR Inuit) AND health AND curriculum AND (postgraduate OR undergraduate)" yielded 57 results. Grey literature was excluded from this search.

We all separately reviewed each of the 57 articles. Articles were selected if their subject matter included indigenous health-related curricula within university health science courses and they were published in English in 1999 or later.

Articles were excluded if:

- the curriculum had no specific focus on indigenous health (eg, if they described a generic cross-cultural curriculum);
- the indigenous focus of the curriculum was only incidental (eg, if a placement happened to be in a location with an indigenous population but was not designed with an indigenous health focus); and
- the curriculum was predominantly for indigenous students.

We analysed articles to determine the stated aims, rationales and evaluation of curricula, and to identify whether the curricula discussed were integrated or stand-

Abstract

Objective: To undertake a systematic literature review to determine the scope, rationales, and evaluation foci of indigenous health curricula included in university-based professional training of health care service providers.

Study design: Systematic review.

Data sources: We searched the Australasian Medical Index, ATSIhealth (Aboriginal and Torres Strait Islander Health Bibliography), CINAHL PLUS, MEDLINE, SCOPUS version 4, and Web of Science databases using relevant keywords. Our initial search identified 1247 articles and our refined search identified 57 articles. Thirty-six articles published between 1999 and 2011 that referred to indigenous health-related curricula within university health science courses were selected for review.

Data synthesis: While almost all the articles were explicit that improving indigenous health was an aim of their curriculum, none evaluated the impact of curricula on patient outcomes.

Conclusion: There appears to be a widespread assumption in the literature that improving practitioner skills, knowledge and attitudes will lead to improvements in indigenous health outcomes. The literature showed evidence of efforts towards evaluating learner (student) outcomes, but no evidence of evaluation of patient outcomes. We need to begin to design methods that focus on evaluating the impacts of indigenous health curricula on patient outcomes, while continuing to investigate the impact of curricula on learner outcomes.

alone, and optional or compulsory. Consensus was reached in selecting and analysing articles through discussion and clarification.

Results

Thirty-six articles³⁻³⁸ met the inclusion criteria and were reviewed. Significantly, 10 of the articles were published in 2011, indicating a recent spike in publications in this area. We note that seven of these^{13,21,26,28,33,34,36} were published together in a special edition of *Focus on health professional education* featuring initiatives in indigenous medical education, based on invited contributions from the international LIME (Leaders in Indigenous Medical Education) Connection III conference held in Melbourne in December 2009.

The literature review was international in scope, but most articles in the last decade (34 out of 36) referred to Australian and New Zealand contexts.

Seventeen articles referred exclusively to medical curricula, and an additional seven referred to multidisciplinary

curricula (which tended to also include medicine, usually where the curricula were faculty-wide). Ten articles focused on nursing curricula, six on pharmacy curricula, and five on dentistry curricula. Four or fewer articles covered other disciplines.

Curriculum elements

Nineteen articles discussed indigenous health curricula that were compulsory, or had elements that were compulsory, and four discussed curricula that were fully optional or elective. The remainder did not specify whether their curricula were optional or compulsory.

Almost half (17 articles) specified that the indigenous health curriculum was integrated within a broader curriculum and was not a stand-alone element.

Purpose and rationale for curricula

All the articles that mentioned the rationale and drivers for indigenous health curricula (35 out of 36) specified some intention to improve indigenous health, whether health outcomes per se or through improved engagement with health practitioners and/or health systems. The subthemes that emerged are listed in the Box.

The two key aims given were to improve students' skills, knowledge and attitudes in indigenous health (31 articles); and to improve students' cultural sensitivity (25). The next most mentioned aims were to help improve interactions with patients (22) and to develop students' awareness of equity and social justice considerations, as well as social accountability issues (18).

Impact of curricula on learner (student) outcomes

Thirty-one articles mentioned evaluating students' skills, knowledge and/or attitudes. Of these articles, 17 referred to evaluating all three realms, six referred only to evaluating attitudes, six to knowledge, and two to skills. The second most commonly stated outcome to be evaluated was improved cultural sensitivity (15 articles), which was evaluated in various ways, usually by a questionnaire given to students after they completed the learning exercise.

Impact of curricula on patient outcomes

Although 35 of the 36 articles explicitly stated that improving indigenous health was a rationale for their curricula, none described evaluation of the impact of their curriculum initiatives and training on patient health outcomes. Four articles theoretically recognised a role for evaluation of patient outcomes.^{24,27,33,37}

Discussion

Of the articles that met the criteria for our review, most focused on Australian and New Zealand curricula that included medicine and a compulsory indigenous health element. A significant proportion were recent, and half specified integration of the indigenous health component.

In our experience, "integrated" curricula can be simply vertically collocated, rather than meaningfully integrated, which is consistent with other findings that integrated

Rationales for curricula given in the articles reviewed

Stated rationale for curriculum	No. of articles mentioning
Explicitly to help improve indigenous health	35
Equity, social justice or social accountability considerations	23
Explicit policy of professional group	17
Faculty or school policy	17
Response to key literature or reports	16
Formal, indigenous health curriculum guidelines (eg, CDAMS or other framework)	16
To meet accreditation requirements	12
National policy	11
Driven by specified individual or interest group	11
Explicitly to redress identified gaps in indigenous health training	9
University policy	9
To meet specific local community needs	6
To address remote workforce shortages	4
No rationale stated	1

CDAMS = Committee of Deans of Australian Medical Schools. ◆

indigenous health curricula tend to be relatively opportunistic and ad hoc.³¹

Our finding that indigenous health curriculum evaluation is not patient outcome-focused is in common with reviews of other literature examining cross-cultural training curricula.³⁹⁻⁴¹ Despite increasing calls for a focus on patient outcome evaluation,^{27,33,36,39,41-43} there still appears to be a widespread assumption in the literature that increasing practitioner skills, knowledge and attitudes will lead to improvements in indigenous health, as evidenced by the primary rationale for inclusion of indigenous health content. Impact on patient outcomes is an area that could benefit from greater attention. As stated by researchers in New Zealand:

If outcomes are not measured it is impossible to determine the effectiveness of the teaching and to identify where changes to the curriculum are required.²⁷

There are, of course, other motivations, in addition to improving indigenous patient health outcomes, for including indigenous-specific curricula in health science training. These include rights-based approaches, ensuring indigenous students are able to "see themselves" in the curriculum,⁴⁴ and drawing upon indigenous examples where these are exemplars to illustrate the learning objectives. The exclusion or inclusion of any population group carries with it implicit messages that are absorbed by the learners and other educators across a faculty.

The foundations upon which effective indigenous health curricula are based need to be acknowledged. To do this calls for both philosophical and empirical shifts in the way indigenous health curricula are understood and evaluated. Philosophically, the pre-eminent disciplinary basis of many schools of medicine is in science, rather than in humanities. Assumptions that "medicine is a culture of no culture" are increasingly being exposed as erroneous⁴⁵ and harmful.^{46,47} Many of the challenges to reducing differential patient outcomes for indigenous peoples are not a result of health professionals' lack of technical or scientific skill. What is missing in health science education is a broad

and foundational understanding of the contexts in which indigenous people and health professionals meet and interact (with, in most cases, limited previously shared experience), and of the consequent impacts of these contexts on health and health care outcomes.

We caution that medical schools should not use these findings as an excuse for inactivity. Rather, they should participate in building the evidence that demonstrates the utility and positive outcomes of indigenous health curricula for indigenous peoples. Curriculum evaluation should continue to be carried out in an ordered, planned way, such that the impact of indigenous health curricula on the learner can be further understood, before the more difficult extension to evaluation of patient outcomes.

Along with other commentators evaluating medical education,^{48,49} we recognise the “complexity of linking cross-cultural curricula to health outcomes in a simplistic way” and that “the challenge of this type of evaluation cannot be overstated”.⁴⁸ Establishing the evidence to demonstrate whether specific indigenous health curricula have a positive impact on health outcomes for indigenous peoples is a complex and long-term project. The challenge for indigenous health curriculum developers is to begin to design methods that focus on evaluating the impacts of the curricula on patient outcomes, while continuing to measure the impact on the learner.

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- 1 Australian Medical Council. Assessment and accreditation of medical schools: standards and procedures. 2010. <http://www.amc.org.au/images/Medschool/standards.pdf> (accessed May 2012).
- 2 Australian Dental Council, Dental Council of New Zealand. Accreditation standards: education programs for dentists, 2010. <http://www.adc.org.au/asd.pdf> (accessed May 2012).
- 3 Nash R, Meiklejohn B, Sacre S. The Yapunya project: embedding Aboriginal and Torres Strait Islander perspectives in the nursing curriculum. *Contemp Nurse* 2006; 22: 296-316.
- 4 Duke M, Ewen S. Social and emotional wellbeing training of psychiatrists in Victoria: preliminary communication. *Australas Psychiatry* 2009; 17 Suppl 1: S100-S103.
- 5 Duke M, Ewen S. Implementation of Indigenous mental health training in Victoria. *Australas Psychiatry* 2009; 17: 228-232.
- 6 Hampton R, McCann W. Developing a postgraduate program in Indigenous mental health and wellbeing at University of Southern Queensland. *Australas Psychiatry* 2007; 15: S75-S79.
- 7 Pedersen A, Barlow FK. Theory to social action: a university-based strategy targeting prejudice against Aboriginal Australians. *Aust Psychol* 2008; 43: 148-159.
- 8 Ranzijn R, McConnochie K, Day A, et al. Towards cultural competence: Australian Indigenous content in undergraduate psychology. *Aust Psychol* 2008; 43: 132-139.
- 9 Sonn CC. Incorporating Indigenous and cross cultural issues into an undergraduate psychology course: experience at Curtin University of Technology. *Aust Psychol* 2000; 35: 143-149.
- 10 Bazen JJ, Kruger E, Dyson K, Tennant M. An innovation in Australian dental education: rural, remote and Indigenous pre-graduation placements. *Rural Remote Health* [internet] 2007; 7: 703. http://www.rrh.org.au/publishedarticles/article_print_703.pdf (accessed Apr 2011).
- 11 Bazen J, Paul D, Tennant M. An Aboriginal and Torres Strait Islander oral health curriculum framework: development experiences in Western Australia. *Aust Dent J* 2007; 52: 86-92.
- 12 Andersen C. Indigenous footprints on health curriculum. *Australian Journal of Indigenous Education* 2009; 38 Suppl: 40-45.
- 13 Anderson DeCoteau M, Lavallee B. Lessons learned and pathways forward: chronicling indigenous medical workforce development in Canada since 2004. *Focus on Health Professional Education* 2011; 12: 13-22.
- 14 Broughton J. An oral health intervention for the Maori Indigenous population of New Zealand: Oranga niho Maori (Maori oral health) as a component of the undergraduate dental curriculum in New Zealand. *Int Dent J* 2010; 60 Suppl 2: 223-228.

- 15 Carr SE, Paul D, Bazen J. Integrated undergraduate Aboriginal health curricula: validating a program evaluation survey tool. *Focus on Health Professional Education* 2011; 12: 34-40.
- 16 Crampton P, Dowell A, Parkin C, Thompson C. Combating effects of racism through a cultural immersion medical education program. *Acad Med* 2003; 78: 595-598.
- 17 Dowell A, Crampton P, Parkin C. The first sunrise: an experience of cultural immersion and community health needs assessment by undergraduate medical students in New Zealand. *Med Educ* 2001; 35: 242-249.
- 18 Edwards C. The Indigenous content of Australian nutrition and dietetics degrees. *Aborig Isl Health Work J* 2005; 29: 11-14.
- 19 Ewen S, Gough J. Evaluation of Indigenous child health teaching and learning: improving health outcomes? *Focus on Health Professional Education* 2007; 9: 23-32.
- 20 Ewen SC, Collins ME, Schwarz JA, Flynn EM. Indigenous simulated patients: an initiative in “closing the gap” [letter]. *Med J Aust* 2009; 190: 536.
- 21 Ewen SC, Robertson K, Kamaka M, Pitama SG. Indigenous simulated patient programs. A three-nation comparison. *Focus on Health Professional Education* 2011; 13: 35-43.
- 22 Fredericks B. Which way? Educating for nursing Aboriginal and Torres Strait Islander peoples. *Contemp Nurse* 2006; 23: 87-99.
- 23 Hays R. One approach to improving Indigenous health care through medical education. *Aust J Rural Health* 2002; 10: 285-287.
- 24 Horsburgh M, Lamdin R. Maori health issues explored in an interprofessional learning context. *J Interprof Care* 2004; 18: 279-287.
- 25 Jarvis-Selinger S. Social accountability in action: university-community collaboration in the development of an interprofessional Aboriginal health elective. *J Interprof Care* 2008; 22: 61-72.
- 26 Jones RE. Te Ara: a pathway to excellence in Indigenous health teaching and learning. *Focus on Health Professional Education* 2011; 13: 23-34.
- 27 Jones R, Pitama S, Huria T, et al. Medical education to improve Maori health. *N Z Med J* 2010; 123: 113-122.
- 28 Jong M. Learning about Indigenous health: immersion and living with elders in Northern Canada. *Focus on Health Professional Education* 2011; 13: 44-51.
- 29 Kairuz T, Shaw J. Undergraduate inter-professional learning involving pharmacy, nursing and medical students: the Maori health week initiative. *Pharm Educ* 2005; 5: 255-259.
- 30 Larson JP, Wase Wakpa: a community-university connection. *Home Health Care Manag Pract* 2005; 18: 53-56.
- 31 Lower T. Indigenous content in the health promotion curricula. *Aborig Isl Health Work J* 2001; 25: 33-34.
- 32 Mackean T, Mokak R, Carmichael A, et al. Reform in Australian medical schools: a collaborative approach to realising Indigenous health potential. *Med J Aust* 2007; 186: 544-546.
- 33 Mazel O, Anderson I. Advancing Indigenous health through medical education. *Focus on Health Professional Education* 2011; 13: 1-12.
- 34 Meyer L, Jackson Pulver LR, Fitzpatrick S, Haswell MR. Scenario planning in Indigenous health. *Focus on Health Professional Education* 2011; 13: 65-67.
- 35 Mortley E. Efficacy of an Aboriginal Health Unit in an undergraduate nursing course. *Aborig Isl Health Work J* 2011; 35: 11-13.
- 36 Paul D, Allen C, Edgill P. Turning the corner: assessment: a key strategy to engagement and understanding in Indigenous health. *Focus on Health Professional Education* 2011; 13: 52-64.
- 37 Paul D, Carr S, Milroy H. Making a difference: the early impact of an Aboriginal health undergraduate medical curriculum. *Med J Aust* 2006; 184: 522-525.
- 38 Ranzijn R, McConnochie K, Nolan W, et al. Teaching cultural competence in relation to Indigenous Australians: steps along a journey. *In Psych* 2007; 29: 10-11.
- 39 Beach MC, Price EG, Gary TL, et al. Cultural competence: a systematic review of health care provider educational interventions. *Med Care* 2005; 43: 356-373.
- 40 Gates M, Bradley KD. Measuring cross-cultural competence in medical education: a review of curricular effectiveness and attitudinal studies. Annual meeting of the American Educational Research Association; 2009 April 12-18; San Diego, Calif. <http://www.uky.edu/~kbrad2/Gates.pdf> (accessed Nov 2011).
- 41 Gustafson DL, Reitmanova S. How are we “doing” cultural diversity? A look across English Canadian undergraduate medical school programmes. *Med Teach* 2010; 32: 816-823.
- 42 Brach C, Fraser I. Can cultural competence reduce racial/ethnic health disparities? A review and conceptual model. *Med Care Res Rev* 2000; 57 Suppl 1: 181-217.
- 43 Dharamsi S. Moving beyond the limits of cultural competency training. *Med Educ* 2011; 45: 764-766.
- 44 Minniecon D, Kong K. Healthy futures: defining best practice in the recruitment and retention of Indigenous medical students. Canberra: Australian Indigenous Doctors’ Association, 2005.
- 45 Taylor J. Confronting “culture” in medicine’s “culture of no culture”. *Acad Med* 2003; 78: 555-559.
- 46 Frenk J, Chen L, Bhutta ZA, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010; 376: 1923-1958.
- 47 Stephens C, Porter J, Nettleton C, Willis R. Disappearing, displaced and undervalued: a call to action for Indigenous health worldwide. *Lancet* 2006; 367: 2019-2028.
- 48 Betancourt JR. Cross-cultural medical education: conceptual approaches and frameworks for evaluation. *Acad Med* 2003; 78: 560-569.
- 49 Betancourt JR, Green AR. Commentary: linking cultural competence training to improved health outcomes: perspectives from the field. *Acad Med* 2010; 85: 583-585.

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