Received: 13 February 2023 | Revised: 27 May 2023 | Accepted: 5 June 2023

DOI: 10.1111/medu.15154

STATE OF THE SCIENCE

RESEARCH SUPPORTS

Recreating the future—Indigenous research paradigms in health professional education research

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Abstract

Introduction: Health and self-determination are recognised as universal human rights. Health professional education research and practice hold the capacity to prioritise values, worldviews and agendas that envisage sustainable and equitable futures for the entire community served. This paper explores the need for the co-location of Indigenous research paradigms in health professional education research and teaching. Indigenous communities have a long history of science, research and sustainable living and are holders of ways of knowing, being and doing that can shape actions and priorities in health research that value equity and sustainability.

Discussion: Knowledge construction in health professional education research does not occur in isolation nor is it value neutral. A continued dominance of the biomedical approach to health creates a system of innovation that is unbalanced and unable to deliver health outcomes demanded by contemporary society. As power and hierarchies are embedded in health professional education research and praxis, transformative action is required to bring forth marginalised voices in research processes. Critical reflexivity regarding the ontological, epistemological, axiological and methodological positioning of researchers is an important step towards creating and sustaining research structures that effectively value and co-locate different perspectives in knowledge production and translation.

Conclusion: Working towards more equitable and sustainable futures for Indigenous and non-Indigenous communities requires health care systems to be informed and guided by different knowledge paradigms. This can work to avoid the ongoing reproduction of inefficient biomedical structures and purposefully disrupt the status quo of health inequities. Realising this requires the effective co-location of Indigenous research paradigms and ways of working into health professional education research that centre relationality, wholism, interconnectedness and self-determination. This calls for a raising of the critical consciousness of health professional education research academies.

1 | INTRODUCTION

Good health and self-determination for individuals and communities are universal human rights.[1] Health professional education research has a significant role in the realisation of universal human rights as it can shape health care workforce practices, systems and policy through knowledge translation, advocacy and leadership.[2] Through these actions, health professional education research can inform better ways to build health practitioner capability to meet the diverse needs of the community served by being responsive to ongoing challenges faced within contemporary society. Such challenges include the entrenched health disparities experienced by Indigenous populations,[2] the intersecting ecological crises impacting health and well-being through climate change[3] and the maintenance of broad health inequities shaped by social, political and economic forces across the globe. As health professional education research can be a vehicle for shared meaning making,[4] it holds the capacity to prioritise values, worldviews and agendas that envisage sustainable and equitable futures for the entire community served. While this paper focuses on health professional education research, core concepts are also contextualised to health professional education activities and clinical practice. This is in recognition of the interconnectedness that research, education and clinical practice have regarding knowledge translation and researcher positioning and expertise and the role each of these play in shaping our futures.

Knowledge construction in health professional education research does not occur in isolation nor is it value neutral,[5] as it is influenced by the knowledge paradigm and relational positioning of the researcher/s.[6] Being socially located in an unequal power position can shape what is seen as knowledge, what is considered worth knowing and who is considered knowledgeable.[7,8] This reflects the ongoing struggle that Indigenous peoples and perspectives have in being seen as valid and legitimate in dominant biomedical research contexts such as health and health care delivery.[9,10] Biomedical approaches to health have contributed to significant improvements in mortality and morbidity[11]; however, a continued biomedical dominance risks creating a system of innovation that is unbalanced and unable to deliver health outcomes demanded by contemporary society.[12] This is also evident in the criticism of the planetary health field for its overreliance on western understandings of health that separate humans from each other and the rest of nature.[3] Envisioning sustainable and equitable futures requires a rebalancing of perspectives that inform health professional education research going forward.

This paper outlines why the co-location of Indigenous research paradigms in health professional education research is vital when taking action towards recreating more sustainable and equitable futures. Indigenous peoples make up 6% of the global population,[13] represent more than 4000 languages spoken and are holders of knowledge systems, beliefs and practices distinct from the dominant society that often became so through settlement, conquest and occupation.[14] There is a pressing need for greater inclusion and voice of Indigenous peoples within universities.[15] Though a commonly used term in the literature and within this paper, the authors acknowledge how the use a global definition of Indigenous peoples is problematic, as it can be seen to represent Indigenous peoples as a monoculture, and ignores the diversity that exists within and between Indigenous communities.[14] Consequently, it is important to acknowledge that there are broad, shared characteristics of Indigenous peoples that include concepts of self-identification and community acceptance, historical connections pre-colonisation, strong connections to land and natural resources and distinct social, cultural, economic and political systems.[14] Indigenous communities have a long history of science, research and sustainable living and are holders of ways of knowing, being and doing that can shape actions and priorities in health research that value equity and sustainability.

2 | RESEARCH PARADIGMS IN HEALTH PROFESSIONAL EDUCATION RESEARCH

This paper explores the pressing need for diverse perspectives and values in health professional education research paradigms to shape knowledge construction for sustainable and equitable futures. Research paradigms consist of four entities: ontology (nature of reality), epistemology (ways of knowing reality), axiology (ethics, values and morals guiding knowledge creation) and methodology (theories of knowledge creation).[5,9] These entities are interrelated and dynamic, with the research paradigm being more than the sum of the four parts.[6] This paper will explore each of these four entities through an Indigenous research lens, providing additional observations regarding research practices and approaches that draw upon diverse knowledge systems effectively. We propose that the effective co-location of Indigenous ways of working and understanding inform health professional education research and praxis and this is fundamental to the development of sustainable and equitable futures. It is important to note that this paper does not seek to provide a pan-Indigenous approach to co-locating diverse perspectives in health professional education research, nor does it attempt to provide detailed descriptions of Indigenous knowledges as this risks simplification and cultural essentialism.[16] Collaborative and respectful approaches to health professional education research demands both advocacy and critical reflection from researchers and research academies. This paper seeks to raise the critical consciousness about the need for diverse and co-located knowledge paradigms moving forward, with key points addressed outlined in Box 1.

In the spirit of self-reflexivity and embracing the importance of relationality, this paper has been co-authored by A.M., a Gija Aboriginal woman from Western Australia with Scottish and Irish ancestry who has studied in the western discourse of medicine. A.M. works as a public health academic on Kaurna country in South Australia engaging in teaching and research activities advocating for health equity. D.P. is a non-Aboriginal medical practitioner and health academic working on Whadjuk Noongar Boodja in South-Western Australia who works towards building the inclusivity and cultural capability of future health professionals. Stating our positionality is important in countering scholarly practices that ignore place, belonging and

BOX 1 Key points addressed in this paper

Research paradigms include the ontological, epistemological, axiological and methodological positioning of the researcher/s.

Sustainable and equitable futures call for the co-location of diverse research paradigms to inform health professional education research and praxis.

Effective co-location of Indigenous research paradigms that centre relationality, wholism, interconnectedness and self-determination calls for a raising of the critical consciousness of health professional education research academies.

identity and the power relations that sit alongside these[7] given their importance in the creation of research paradigms.

The opportunity exists for the academy to counter narrow, deficit-based assumptions by developing deeper understandings of the causation of Indigenous health inequities that are nuanced and inclusive.[17] This requires critical reflexivity regarding the ontological, epistemological, axiological and methodological positioning of researchers, an important step towards creating and sustaining research structures that effectively value and co-locate different perspectives in knowledge production and translation. As researchers collaborate from different knowledge paradigms, creating what is termed the multidisciplinary edge effect,[18] generative and productive ways of approaching complex phenomena can be realised.[18]

3 | RELATIONSHIPS AND INTERCONNECTEDNESS

Diverse ontological perspectives are urgently needed for future approaches in research, as the oppression of different ways of seeing reality can suppress alternative solutions and approaches.[19] Indigenous knowledge systems have existed for thousands of years and include conceptualisations of health and healing practices.[20] While there is great diversity within and between Indigenous populations across the globe, there are shared ontological approaches to Indigenous ways of knowing and being that centre relationships, interconnectedness with non-human beings and the land and connection to ancestors and spirituality.[7] In Australia, the seven domains of spirit, spirituality, ancestors; country and land; body and behaviours; mind and emotions; family and kinship; community; and culture underpin self-hood and experiences of health and well-being for First Nations peoples.[21] In Aotearoa, the Te Wheke model of health for First Nations peoples reveals how different dimensions of health interconnect to create and sustain health.[22] These dimensions include the well-being of the family and individual; spirituality; mind; physical well-being; extended family; life force; unique identities of individual and family; breath of life from forebears and the open and healthy expression of emotion.[22] The Te Whetu model, another conceptualisation of health for First Nations peoples in Aotearoa, centralises land as an integral component to health and healing approaches.[23] The belief that our earth is a living entity is a fundamental distinction between Indigenous and Westernised ontologies.[19] As sustainable futures that prioritise equity call for different approaches and ways of seeing the world to guide practice and innovation, diverse ontological perspectives in research must become a priority.[3]

Indigenous and biomedical conceptualisations of health offer distinct perspectives.[12,22] The former centres on interconnectedness and relationality with each other and the land, while the latter traditionally favours reductionist models aiming to treat disease with less emphasis on broader drivers of health such as the environment or socio-cultural contexts.[24] Biomedicine is also rooted in patriarchy,[25] evident in the historical gendered context of medicine that has prioritised particular forms of knowledge while maintaining barriers to other more critical forms of research and practice.[25] Further, knowledge discourses that promote personal autonomy and individualism not only run counter to Indigenous collectivist values but perpetuate victim-blaming narratives of individuals for their health circumstances and behaviours while ignoring structural drivers of inequity.[10,26] Biomedical biases underpinning research practices and knowledge translation efforts limit innovation and improvement in health care delivery.[24]

In recognition of the limitations of the biomedical discourse, Haynes and colleagues in Australia call for small-scale, local-level changes using research approaches that apply critical, decolonising and strengths based practices that also demonstrate cultural safety through reflexivity regarding power dynamics.[24] When there is respectful co-location of Indigenous perspectives of health and well-being that considers culture, context and diversity, there is the potential for positive health outcomes to be achieved in addition to enhanced agency of health care practitioners to address health inequities.[24] This requires health care practitioners to have skills in critiquing health care structures beyond a biomedical paradigm and to be prepared to work in intercultural spaces, to ensure they do not perpetuate marginalising and ineffective practices.[24] This highlights the importance of health professional education researchers to embrace diverse ways of knowing, being and doing, to ensure health practitioners not only learn from different knowledge paradigms in health professional education but are skilled in developing capabilities to avoid reproducing inefficient biomedical structures in their work as future professionals. This requires a purposeful disruption of the status quo that reproduces Indigenous health inequity and maintains biomedical and racial privilege[8] in health care systems.

4 | POWER AND HIERARCHY

Research epistemologies in Indigenous health have been critiqued in the context of racism[5] as historically scientific research has been used to rank humans unfairly into hierarchies of inferiority and

superiority.[5,8] Racialised narratives of difference occur at sites of power[5] leading to historical and contemporary dominance of colonial values and agendas which have shaped the conduct of research that has historically excluded and delegitimised Indigenous ways of knowing, doing and being. Learning from the past demands that health professional research epistemologies address the ongoing pervasive effects of racism on Indigenous people's health and well-being through Indigenous sovereignty in research processes and the implementation of decolonial epistemological practices.[5] Such practices can be achieved through privileging the lived experiences of Indigenous peoples and their worldviews, values and goals in order to redress past injustices and recreate equitable systems and structures to realise health and well-being into the future.[9]

Privileging Indigenous voices requires health professional education researchers to critically reflect on the role of power in their research approaches and structures, as the unequal distribution of power between population groups is the underlying driver to the social construction of race.[27] Power exists in both relational and structural domains, is influenced by social identities such as gender and ethnicity and is pervasive in its structural impacts.[28] Hierarchies are created through power allocation where groups are organised based on their valued social resources[28] which includes knowledge. As power and hierarchies are embedded in health professional education research and praxis, explicit attention and transformative action is required to bring forth marginalised voices in research processes.[28,29] This requires action by research academies to ensure Indigenous peoples have the power to not only determine research priorities through diverse epistemological standpoints but be able to source funding for that research also.[30]

Addressing power imbalances can be challenging for Indigenous academics working in research structures resistant to change.[31] This is compounded by low levels of Indigenous representation in academia, raising the need for career pathways for minority groups to be carefully nurtured to ensure equitable representation in education and research initiatives.[32] Tokenistic inclusion of Indigenous researchers only works to further marginalise Indigenous perspectives and values in the academy.[31] Academic institutions also need to critically interrogate their boundaries of knowledge legitimacy, as an over reliance on academic degrees and credentials can exclude valued knowledges and perspectives,[33] re-enforcing knowledge hierarchies and perpetuating curricula that has conflicting values regarding inclusion and humanism.[33] This requires a raising of the critical consciousness from academic institutions in health professional education and research regarding whose voices are heard, valued and prioritised in research and curricula.

5 | ACCOUNTABILITY AND RECIPROCITY

The underpinning values of research agendas should be considered when envisioning a sustainable and equitable future. Research axiology shapes what is considered worthy of research along with the ethical boundaries deemed appropriate when seeking knowledge.[9] Key axiological positionings in Indigenous health research include relational accountability, reciprocity, respect, spirit and integrity, equity, cultural continuity and rights to data sovereignty.[9,34,35] Such processes rebalance power and afford control over research processes to Indigenous peoples.[9] The long history of exploitation of Indigenous people's land and knowledge reinforces the importance of knowledge safekeeping practices to ensure research translation efforts appropriately draw from and acknowledge the source of information shared.[31] This further emphasises the importance of strong relationships and partnerships between health professional education research structures with Indigenous researchers, communities and organisations, to counter harmful practices of 'discovery', collection and appropriation of Indigenous knowledges by western science.[8] This includes enhanced inclusiveness of ethical research bodies that can support and facilitate culturally safe research practices as opposed to creating additional barriers to research.[36]

A salient example in practice is the Native Hawaiian and Pacific Islander COVID-19 Response, Recovery and Resilience team formed to address social, cultural, health and economic impacts from COVID-19 along with deficiencies in data collection, management and reporting of COVID-19 in Native Hawaiian and Pacific Islander communities.[37] The large and diverse team was guided by the core values of *pono* (equity, just, virtuous), *aloha* (love, compassion), *kuleana* (right, privilege, responsibility) *o'hana* (family relations), *laulima* (cooperation, joint action) and *imua* (movement forward, to advance),[37] with cultural protocols and practices woven into the work where team members were guided by ancestors and spiritual relations.[37] This collaborative model underpinned by cultural values resulted in more effective partnerships and resource utilisation between the key stakeholders of community, academic, government and non-profit organisations.[37] This example demonstrates the successful outcomes that can be achieved in health profession education practice and research when underpinned by cultural values and guided by local Indigenous peoples.

Another effective clinical practice example is the co-location of Indigenous knowledges and culture alongside biomedical approaches to improve health outcomes and strengthen the cultural identity of Indigenous peoples.[10,20] The successful co-location of Indigenous culture into health care delivery is evident in Indigenous primary health care services.[38] In these practices, service delivery is underpinned by Indigenous cultural values, customs, beliefs and traditional healing approaches[38] that address health needs at the individual, family and community level.[38] By embedding Indigenous cultural values and beliefs into health care design and delivery, services are able to better engage with community, deliver culturally responsive care, support self-determination and enact strategies at the workforce level to deliver wholistic services.[38] Despite numerous benefits of the Indigenous primary health care model, sustainability is limited by significant underfunding combined with short term rather than long term funding, due in part to a lack of recognition by policy makers of the wise-practice characteristics of this approach.[38] This clearly demonstrates the need for greater co-location of Indigenous perspectives at all levels of health professional education research to sustain appropriate

research and advocacy for services that meet diverse community needs and action equity in health care.

6 | DECOLONISING METHODOLOGIES

Applying a critical lens to the methodological tools implemented in health professional education research is a key step in generating new approaches that maximise desired outcomes and resource investment.[39] Regardless of whether research methods create data in the form of words, images, statistics or other, effective methodological approaches need to generate knowledge that forms comprehensive and nuanced narratives of Indigenous peoples, recognises diversity, is inclusive of structural contexts, measures goals and not just problems, and is both accessible and amenable to Indigenous community perspectives.[39] Decolonised methodologies aligned with reciprocity and interconnectedness seek to understand the subjectivity of human experience through collaborative and community-led approaches that often have a narrative or story-based element.[40] Achieving this requires Indigenous leadership and meaningful representation throughout all stages of data collection, analysis and knowledge translation.

One example of approaching this is described by Curtis, who calls for researchers involved in work that impacts Māori and Pacific Islander communities to engage in methodological approaches that are consistent with the principles outlined in the Kaupapa Māori framework.[9] The Kaupapa Maori framework emerged from a movement critiquing the dominant hegemony of western positivist research and defines research as by Māori, for Māori and with Māori.[41] Methodological consistency with the Kaupapa Māori principles can work to ensure Indigenous community control while avoiding potential misinterpretation and misappropriation regarding Indigenous leadership and sovereignty.[9] Further, effective practice in the Kaupapa Māori framework includes a commitment to excellence in research that uses the most appropriate tools for the research question,[9] which can include both quantitative and qualitative approaches.

Educational practices can benefit from applying a critical decolonial lens to methodology, for example by drawing upon multiple teaching methods that include experiential learning.[20] Educational methods that encourage critical self-reflection in authentic learning environments,[42] as well as privileging the lived experiences of Indigenous knowledge holders such as Elders and community members,[20] are important in redressing biomedical biases in health professional curricula.

7 | RECREATING RELATIONSHIPS THROUGH WISE PRACTICE

> Sharing is a good thing to do, it is a very human quality. To be able to share, to have something worth sharing, gives dignity to the giver. To accept a gift and to reciprocate gives dignity to the receiver. To create something new through that process of sharing is to recreate the old, to reconnect relationships and to recreate our humanness.
>
> –Tuhiwai Smith[19] (p. 111)

The opportunity for innovation guided by the sharing of different perspectives[43] highlights the importance of doing this work in a respectful and effective way. The co-location of diverse ways of knowing within research spaces with intersecting Indigenous and western academic traditions must be approached respectfully with appropriate guiding principles.[31,43] Canadian Aboriginal Mi'kmaw Elders Albert and Murdena Marshall present the conceptual notion of Etuaptmumk, or two-eyed seeing, that sees the strengths of mainstream and Indigenous knowledges working together to create new solutions to complex challenges.[44] In Australia, the Yolngu community from Arnhem land present the concept of Ganma, which draws on the metaphor of salt and fresh water silently coming together to create foam, representing new knowledge.[45] The salt and fresh water do not give up their identity or forget where they have come from in the process, preserving each knowledge system.[45] These approaches are underpinned by a values system that does not legitimise one way of knowing over the other, but rather seeks to draw on different perspectives according to context and need,[43] having hard conversations that turn towards points of difference rather than away from them. This requires mutual respect and understanding from the research team and a responsibility to the community served through the research process[43,45] that recognises the humanity of all involved.[43]

Relationships that are respectful, reciprocal and genuine lie at the centre of Indigenous community life and community development[19] and extend across time and space.[8] Effective research processes are therefore grounded in relationships; relationships with participants, researchers, research structures, the wider environment and relationships with concepts and ideas.[6,34] Respectful relationships in Indigenous health research require socially, spiritually, emotionally and physically safe research environments[40] that recognise Indigenous peoples human rights and self-determination.[19] Relationships are a fundamental component of the CONSIDER statement, which outlines ways to enhance practices and reporting processes in research involving Indigenous peoples.[46] Indigenous leadership and control is a key outcome of this statement that positions non-Indigenous populations as the partner in the research relationship.[46] The CONSIDER statement identifies eight research domains with 17 criteria providing a checklist that can be used to strengthen Indigenous health research praxis.

Respect for diversity is a key step in developing and sustaining effective partnerships with local Indigenous communities as research praxis must be contextually appropriate.[35] As Indigenous contexts are dynamic, fluid and evolve with time, maintaining partnerships throughout research processes are vital.[31] The formation of effective partnerships can be challenging to action when different conceptualisations of what constitutes knowledge is held by research stakeholders.[47] This asks for a critical consciousness regarding researcher positioning where diverse ways of knowing, being and doing are

valued and legitimised within health professional education research. Respectful partnerships can be one way to ensure research processes are accountable to Indigenous perspectives and values to avoid knowledge creation that is not endorsed by the local community.[44]

Sayal and colleagues favour the notion of 'wise practice' over 'best practice' as this approach considers the diversity of Indigenous peoples, removes hierarchical approaches to knowledge, and advocates against the translocation of one research approach into a different setting without local community consultation.[20] Wise practices represent the congruence of lived experiences that are resilient, adaptive and characterised by dynamic learning processes.[48] Such practices contrast with reductionist western concepts of science that value reproducibility, encourage structural sameness and discourage deviation from pre-determined norms.[48] Academic research structures can embrace wise practices through commitment to the local context, sustaining local relationships and collaborative practices that are fluid and dynamic over time, and by reconsidering how the work of researchers and academics are evaluated and recognised.[48,49] This might include a shift away from prioritising measures regarding academic publications and awards to valuing community-based actions and relationships that are foundational to praxis in health professional education research.

8 | TO DENY SELF-DETERMINATION IS TO DENY HUMANITY

> Words are easy, words are cheap.
> Much cheaper than our priceless land.
> But promises can disappear.
> Just like writing in the sand.[50]

Self-determination is a foundational pillar to research efforts aimed to address equity,[26] as to realise self-determination is to acknowledge the shared humanity of all peoples living today. Though self-determination is a recognised right of Indigenous peoples[51] and shown to enhance health outcomes,[52] Indigenous communities are still struggling for recognition, evident for example in Australia's ongoing lack of a treaty with the First Nations communities.[53] Researchers in health professional education can be agents of change through actions that embed and support Indigenous governance and partnership in research approaches and research institutions. By doing so, academics and educators can resist becoming complicit in the maintenance of colonial values in health.[26]

These learnings are timely as colonial processes continue to impact health care delivery for Indigenous peoples through the pervasive effects of institutionalised racism and the delivery of inaccessible care that is of a lesser quality when compared to non-Indigenous peoples. Key takeaway points from this paper are outlined in Box 2. The academy can be complicit in the perpetuation of health disparities through practices that neglect local priorities, maintain power imbalances, disregard local Indigenous knowledges, perpetuate colonial worldviews and advance academic careers as opposed to advancing health and self-determination for Indigenous peoples.[30] Such actions must be redressed in health professional education research practices, structures and application if there is a meaningful commitment to ending Indigenous health disparities for future generations.

Recreating sustainable and equitable futures can become a priority for health professional education research. Our legacy as researchers, educators and practitioners can be shaped through critical self-reflexivity and a deep commitment to the inclusion of diverse knowledge paradigms going forward.[42]

> The latest living Ancestor, here, now, carries a responsibility not just of living, but to think deeply about what legacy will be left in that living.[54]

BOX 2 Key takeaway points

Health care practitioners must learn from different knowledge paradigms to avoid reproducing inefficient biomedical structures and to purposefully disrupt the status quo of health inequities.

Health professional education research epistemologies need to address the ongoing pervasive effects of racism on Indigenous people's health and well-being.

Research methods need to generate knowledge that is comprehensive, considerate of diversity, cognizant of structural contexts and goal focused.

A raising of the critical consciousness regarding whose voices are heard, valued and prioritised in health professional education is urgently needed.

AUTHOR CONTRIBUTIONS

Andrea Mckivett contributed to the writing of this paper, drafted and revised it critically for intellectual content and approved the final version to be published. David Paul contributed to the writing of this paper, drafted and revised it critically for intellectual content and approved the final version to be published.

ACKNOWLEDGEMENTS

The authors would like to acknowledge and thank Associate Professor Jo Thomas for her critical review and feedback on a draft of this paper. We are grateful for her support and guidance. Open access publishing facilitated by Flinders University, as part of the Wiley - Flinders University agreement via the Council of Australian University Librarians.

CONFLICT OF INTEREST STATEMENT

The authors have no conflicts of interest to declare.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

ETHICS STATEMENT

Ethical approval was not sought for this critical review paper as it details current literature to inform future approaches to research.

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How to cite this article: McKivett A, Paul D. Recreating the future—Indigenous research paradigms in health professional education research. *Med Educ*. 2024;58(1):149-156. doi:10.1111/medu.15154