

Educating for planetary health and climate action – a contemporary imperative

The World Health Organization has described climate change as the greatest threat to public health in the 21st Century.¹ Australians are already feeling the effects of a warming planet with more frequent and intense heatwaves, unprecedented droughts, fires and floods having a significant impact on people's health and well-being.²

Among the pressing realities of environmental and health challenges, educational institutions are uniquely positioned to support the transitions needed for a healthier future by incorporating planetary health education into curricula.³

For nurses and midwives to become leaders in planetary health, they must be educated to mitigate the health sector's impact on the environment, prepare for current and future health impacts of climate change, and advocate for greater attention to planetary health.⁴ This infographic presents key findings from four educational studies designed to address these contemporary imperatives. It was developed by members of the Planetary Health for Nursing & Midwifery Research & Education Collaborative.

planetaryhealthcare.com.au

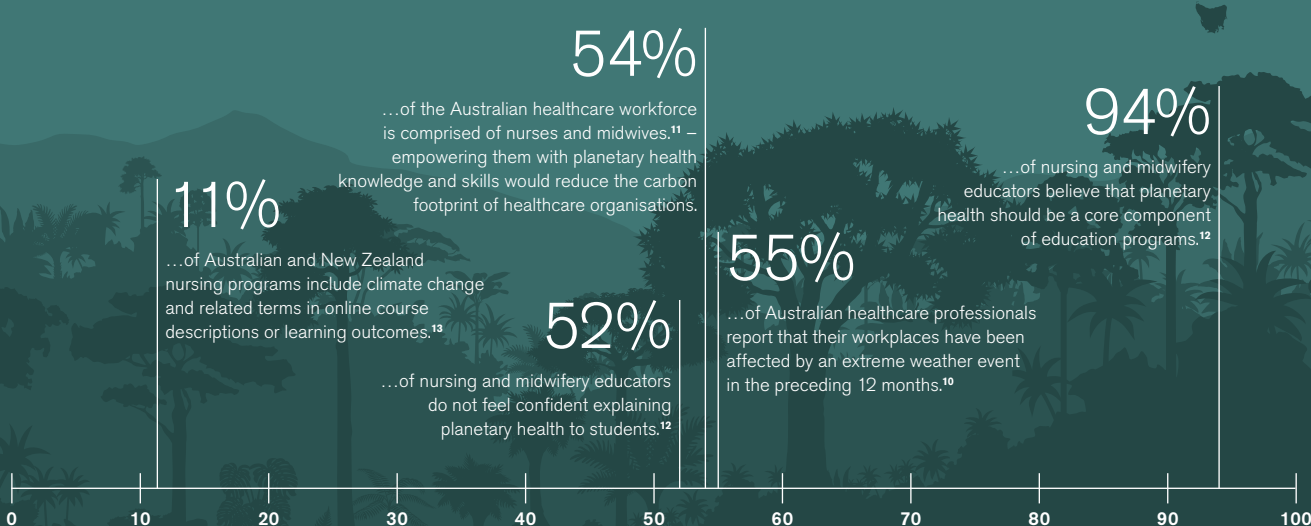
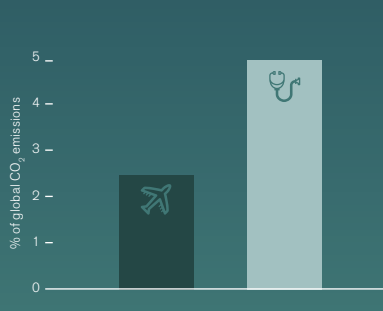
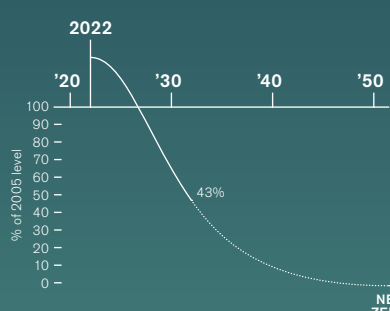
Planetary Health is a solutions-oriented, transdisciplinary field and social movement focused on analysing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth.⁵ It emphasises the need for sustainable practices and policies that protect both the environment and the health of current and future generations.⁶

Climate change is a significant disruptor of planetary health with direct consequences for individuals, ecosystems and natural processes.⁷

In 2022, the Australian Government committed to reducing greenhouse gas emissions by **43%** below 2005 levels by 2030, and to achieving net zero emissions by 2050.²

5% of all carbon dioxide emissions internationally are produced by healthcare organisations – this is double the emissions of the entire aviation industry.⁸

7% of carbon dioxide emissions in Australia are produced by the healthcare system.⁹



STUDY 1

Limited integration of planetary health and climate change in nursing programs¹³

Aim: To benchmark the integration of climate health in nursing curricula in Australia and New Zealand.

Design: A desk-top audit of websites of Australian and New Zealand pre-registration nursing programs was conducted in 2022 to identify the inclusion of the terms: sustainability, climate, climate health, environmental determinants of health, and emissions reduction in course codes/names, learning objectives or learning outcomes.

Results: Four (11%) of the 36 programs audited included climate change and related terms in either the course description (course name/course code/subject), learning outcomes or content. The only terms used were sustainability (n=2), environmental determinants of health (n=2) and climate change (n=2).

Conclusion: This exploration of the extent of planetary health integration evident in Australian nursing programs provided a timely snapshot of implementation gaps in this important area. This study also identified opportunities for innovation in curriculum design that positions the patient/consumer as an integral component of planetary health considerations.

STUDY 2

Students expect climate change and sustainability to be integrated into nursing programs¹⁴

Aim: To i) investigate nursing students' attitudes towards and awareness of climate change and sustainability issues and their inclusion in nurse education; ii) explore differences across a range of countries; and iii) compare attitudes in 2019 with those of a similar sample in 2014.

Design: A cross-sectional multicentre study. Data were collected from first-year undergraduate nursing students from seven universities in five countries (UK, Spain, Germany, Sweden, and Australia) using the Sustainability Attitudes in Nursing Survey (SANS_2) questionnaire. The survey was administered between September 2019 and February 2020.

Results: Participants from all seven universities (n = 846) showed awareness and held positive attitudes towards the inclusion of climate change and sustainability issues in nursing curricula. Students at all universities applied the principles of sustainability to a significant extent at home. Students' attitudes towards climate change and sustainability were significantly higher in 2019 compared to 2014.

Conclusion: Nursing students have increasingly positive attitudes towards the inclusion of sustainability and climate change in nursing curricula. They also recognise the importance of education regarding sustainability and the impact of climate change on health.

STUDY 3

Nursing and midwifery educators have limited knowledge and confidence to teach planetary health concepts¹²

Aim: To explore Australian and New Zealand nursing and midwifery educator's planetary health knowledge, perspectives, confidence and teaching practices, so that recommendations for educators' professional development could be developed.

Design: An online survey was sent to educators from 45 nursing schools in Australia and New Zealand between July and September 2023. The online survey consisted of 29 open and closed-ended questions.

Results: There were 127 responses to the first open-ended question. A total of 97 nursing and midwifery educators completed the remaining questions. While educators had mostly positive perspectives about integrating planetary health into their teaching, most lacked the knowledge and/or confidence to do so effectively.

Conclusion: Australian and New Zealand nursing and midwifery educators acknowledge that planetary health and climate change should be included in nursing and midwifery curricula, but most report a deficit in knowledge and/or confidence about integrating these complex concepts into their teaching.

STUDY 4

Planetary health and climate change knowledge and skills required by undergraduate nursing students¹⁵

Aim: To achieve consensus on the knowledge and skills that undergraduate nursing students require to steward healthcare towards a more sustainable future.

Design: A two-phase real-time Delphi study was conducted between July and August 2023. Phase 1 included the generation of planetary health, climate change and sustainability knowledge and skill statements based on a review of relevant literature. Phase 2 consisted of a real-time Delphi survey designed to seek consensus on the proposed statements from a panel of 42 international experts.

Results: The three overarching domains identified from this study and considered essential to undergraduate nursing curricula were: (1) The science of planetary health and climate change; (2) Mitigation of the adverse impacts of healthcare on the environment; and (3) Adaptation to the actual and expected impacts of climate change on healthcare and health outcomes. Of the 49 survey statements, 44 (90%) achieved ≥75% consensus and 26 (53%) achieved ≥80% consensus. Three statements were removed and 32 were modified to improve clarity of language.

Conclusion: Until now, the lack of consensus on the essential knowledge and skills required by nursing students has hindered the advancement of curricula and impacted educators' confidence in teaching planetary health and climate change. The knowledge and skills statements that emerged through this Delphi study can serve as a guide for incorporating planetary health, climate change and sustainability into nursing education, which in turn has the potential to produce more environmentally conscious and socially responsible nurses.

Note: This study was replicated with midwifery experts (n = 7) using a Nominal Group Technique to validate the domains, knowledge and skill statements and determine their appropriateness for undergraduate midwifery curricula. Minimal changes to the knowledge and skills statements were deemed to be necessary to ensure their relevance to midwifery programs.¹⁶

1 World Health Organization (2015). WHO calls for urgent action to protect health from climate change: <https://www.who.int/news/item/06-10-2015-who-calls-for-urgent-action-to-protect-health-from-climate-change-sign-the-call>
2 Commonwealth of Australia (Department of Health and Aged Care). (2023). National Health and Climate Strategy. <https://www.health.gov.au/sites/default/files/2023-12/national-health-and-climate-strategy.pdf>
3 Guzman, C. (2021). A framework to guide planetary health education. *The Lancet*, 5, 2253-2255. [https://www.thelancet.com/action/showPdf?pii=S2542-5196\(22\)2900110-8](https://www.thelancet.com/action/showPdf?pii=S2542-5196(22)2900110-8)
4 International Council of Nurses. (2018). Position Statement - Nurses, climate change and health. <https://www.icn.ch/sites/default/files/inline-files/ICN%20PS%20Nurses%252c%20climate%20change%20and%20health%20FINAL%20.pdf>
5 Planetary Health Alliance: <https://www.planetaryhealthalliance.org/>
6 United Nations. Climate Change: <https://unfccc.int/climate-action/un-global-climate-action-awards/planetary-health>
7 Intergovernmental Panel on Climate Change (IPCC). Climate Change 2022: Impacts, adaptation and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Secondary Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change: <https://www.ipcc.ch/report/ar6/wg2/>
8 Romanelli, M. et al. (2022) The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels. *The Lancet*, 400(10363), pp. 1619-1654. doi: 10.1016/S0140-6736(22)01540-9
9 Malik, A., Lenzen, M., McAlister, S., & McGain, F. (2018). The carbon footprint of Australian health care. *The Lancet Planetary Health*, 2(1), e27-e35. [https://doi.org/10.1016/S2542-5196\(17\)30180-8](https://doi.org/10.1016/S2542-5196(17)30180-8)

10 Climate and Health Alliance (2021). Real, Urgent and Now: Insights from health professionals on health and climate in Australia: <https://assets.nationbuilder.com/caha/pages/2779/attachments/original/1655874595/caha-run-surety-report-FA-Nov-2021.pdf?1655874595>
11 Australian Institute of Health and Welfare (2022). Health workforce: Health workforce - Australian Institute of Health and Welfare (aihw.gov.au)
12 Bonnamy, J., Levett-Jones, T., Lokmic-Tomkins, Z., Carr, B., Maguire, J., Catling, C., Pich, J., Fields, L. & Brand, G. (in press). Australian and New Zealand nursing and midwifery educators' planetary health knowledge, views, confidence and teaching practices: A descriptive survey study. *Journal of Advanced Nursing*.
13 Tuttici, N., Del Fabbro, L., Richards, C., Tulleners, T., Varsani, Best, O. & Ward, A. (under review). Reconceptualizing nursing curricula for planetary health: A web-based desktop audit. *Teaching and Learning in Nursing*
14 Álvarez-Nieto, C., Richardson, J., Navarro-Perán, M. Á., Tuttici, N., Huss, N., Elf, M., ... & López-Medina, I. M. (2022). Nursing students' attitudes towards climate change and sustainability: A cross-sectional multisite study. *Nurse Education Today*, 108, 105185. DOI: 10.1016/j.nedt.2021.105185
15 Levett-Jones, T., Catling, C., Cheer, S., Fields, L., Foster, A., Maguire, J., McIntyre, E., Moroney, T., Pich, J., Whiteing, N., Lokmic-Tomkins. (2024). Mapping the path to planetary health and sustainable healthcare: A Delphi study identifying essential knowledge and skills for nursing students. *Journal of Advanced Nursing*. DOI: 1111/jan.16229
16 Catling, C., McIntyre, E., Hastie, C. & Levett-Jones, T. (under review). Enhancing midwifery course curricula: validating knowledge and skills in climate change and planetary health. *Women & Birth*.