

The Future of Nursing for Planetary Health Is Today: Essential Transitions for Education and Research

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The Future of Nursing for Planetary Health Is Today: Essential Transitions for Education and Research

Cover Page Footnote

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The triple planetary crisis of pollution, climate change, and biodiversity loss requires a nursing paradigm that encompasses a holistic, global consciousness (Fawcett, 2023; Kalogirou et al., 2020; United Nations Environment Programme, 2021). Nursing for planetary health is at the forefront of the movement to recognize the interconnectedness of Nature,¹ multispecies health, and justice. Embracing the principles of planetary health is necessary for nurses entrusted with the health of individuals, families, and communities. The Canadian Association of Schools of Nursing (CASN, 2022) updated its National Nursing Education Framework to include the term *planetary health* in 2022. As well, the Canadian Nurses Association (CNA) and the Canadian Association of Nurses for the Environment (CANE) partnered to develop a planetary health position statement highlighting this need and recommendations for integrating planetary health into nursing education, research, advocacy, and policy (CNA & CANE, 2024).

This article supports the CNA and CANE recommendations by sharing exemplars from our approaches as nurse scholars in the United States to integrate planetary health in nursing education and research. The United States Big Ten Academic Alliance brought us together at the Midwest Nursing Research Society symposium on March 31, 2023, to share our experiences implementing best practices in planetary health education and designing studies that integrate planetary health and justice. The goal of sharing our collective expertise and scholarship is to offer insights and recommendations regarding the roles and responsibilities of nursing education and research in advancing planetary health and justice.

Background

Planetary health is an ancient way of knowing and a new field of study (Redvers et al., 2020; Whitmee et al., 2015). Since the dawn of time, Indigenous Peoples worldwide have deeply understood that their survival depends on knowing their interconnection with Nature (Redvers, 2018). Indigenous Peoples recognize the land, air, and water as their teachers and providers and understand that harm to planetary environments harms the health of all (Redvers et al., 2020). A resurgence of Indigenous power in the global movement for planetary health identifies humans and all other life as “kin,” highlighting the inherent responsibilities within these kincentric relationships (Jones et al., 2022; Salmón, 2000). Bad River Band tribal member and former chairman Mike Wiggins explained that long before Europeans came to colonize Turtle Island (North America), Indigenous Peoples had centuries of experience and expertise tending to, protecting, and stewarding the lands and waters (Bence, 2023). Our Elders speak of the need for stricter laws to protect our Mother from irreversible damage from climate change—changes that will impact our ability to grow and harvest our traditional foods and clean water for the next seven generations. Bad River Elder Edith Leoso referred to this protection as “pro-life of our Mother.” She states, “I am talking about pro-life of the entire creation. I quit calling the environment the environment. I call it ‘the creation’ because that’s what it is. It is what is placed here for us to be able to live a long, good life” (Converse, 2023). Colonial hierarchies of domination promote ownership narratives that threaten all planetary relations through patriarchy, human exceptionalism, and indifference to the rights of Nature (Jones et al., 2022; Kimmerer, 2020; Redvers et al., 2022). The narratives serve as a debate platform, pitting the foreseeable loss of planetary health against the statistical possibility versus the probability of extinction (Whitmee et al., 2015).

¹ *Nature* is capitalized in this article to reflect Indigenous ways of recognizing the personhood of all beings (Kimmerer, 2020).

The Planetary Boundaries Framework identifies nine processes (i.e., climate change, biosphere integrity, stratospheric ozone depletion, ocean acidification, atmospheric aerosol loading, biogeochemical flows, land system change, novel entities, and freshwater change) as critical to maintaining the stability and resilience of Earth systems (Richardson et al., 2023; Steffen et al., 2015). Six of the nine planetary boundaries—climate change, biodiversity loss, increased biogeochemical flows, the loss of forests, the loss of freshwater, and high amounts of novel entities (e.g., plastics, nuclear waste, and genetically modified organisms)—have already been exceeded, meaning human-caused disturbances have made the Earth less resilient to harm (Richardson et al., 2023).

Humans are beginning to awaken to the harm of colonial disconnection with and abuse of the Earth's natural systems. In 2015, the Rockefeller Foundation-Lancet Commission on Planetary Health published "Safeguarding Human Health in the Anthropocene Epoch," which launched the field of planetary health (Whitmee et al., 2015) and founded the Planetary Health Alliance (PHA). The PHA is a network of over 420 global organizations working together with a shared vision of planetary health as "a solutions-oriented, transdisciplinary field and social movement focused on analyzing and addressing the impacts of human disruptions to Earth's natural systems on human health and all life on Earth" (PHA, 2023, Planetary Health section). The PHA facilitates transdisciplinary collaboration in restoring planetary health using a shared language and vision. The Planetary Health Education Framework, a PHA project, identified five core domains in the education and socialization of all higher education students (Faerron Guzmán et al., 2021): (a) interconnected within Nature, (b) the Anthropocene and health, (c) systems thinking and complexity, (d) equity and social justice, and (e) movement building and systems change. The São Paulo Declaration for Planetary Health furthers the global planetary health community's vision for an equitable, sustainable future (Myers et al., 2021). This includes the health sector and leads us to the unique roles that nurses can play. For example, nurses who promote individual, family, and community health through partnerships with those who are overburdened by the triple planetary crisis (i.e., climate change, pollution, biodiversity loss) will have the necessary knowledge and leadership to guide the health sector's responsibilities for planetary health (CNA & CANE, 2024; LeClair & Potter, 2022).

The Planetary Health Education Framework's central domain, interconnection within Nature, is foundational and is thus essential in guiding nursing education and research (Faerron Guzmán et al., 2021; LeClair & Potter, 2022). Rather than overexposure to the triple planetary crisis, exposure to nourishing relationships within Nature contains elements foundational to higher levels of health and well-being in the individuals, families, and communities nurses work with. Nature supports health through food, water, and materials and provides nonmaterial health benefits such as recreation, leisure activities, personal development, socialization, and beauty (Huynh et al., 2022). Natural environments also support cardiovascular health, reducing inflammatory stress, regulating the sympathetic nervous system, and improving sleep quality (Bahman et al., 2014; Cutshall et al., 2011; Marselle et al., 2014; Morita et al., 2011; Park et al., 2010; Song et al., 2019; Tsunetsugu et al., 2010; Tsutsumi et al., 2017). Nature's nourishing relationships can be expressed through perceived interconnectedness with self, others, and the spiritual world through deep meanings embraced by Indigenous Peoples worldwide, creating a powerful sense of identity, place, and heritage that cannot be achieved by alternative methods (Auer et al., 2017; Salmón, 2000). Nurse educators can integrate these concepts into curricula, and further research is needed to identify how nurses can support the individuals, families, and communities they partner with in

developing nourishing relationships within Nature to improve health and well-being (LeClair & Potter, 2022).

Understanding how to decarbonize the United States health sector is another essential component in nursing education and research. Globally, if the health care sector were a nation, it would be the fourth-largest emitter of the greenhouse gases that cause climate change (Healthcare Without Harm, 2019). In the United States, the health care sector is responsible for 8.5% of the nation's total greenhouse gas emissions (Dzau et al., 2021). Ironically, health professions, which are ethically bound to do no harm and to act to protect and preserve life, are contributing to a future in which life might cease to exist.

As the most trusted profession, nurses can advise institutional, local, state, national, and international policymakers on decreasing planetary health threats through policies that promote a just and sustainable future (Brenan, 2023; LeClair & Potter, 2022). For example, nurses can advocate for policy development and enforcement related to the overexposure of racialized and low-income communities to climate change and pollution (LeClair, 2023). Grounded in the core domains of the Planetary Health Education Framework, nurses recognize the need to reorient all aspects of health system policies (e.g., procurement, waste streams, and energy sources) towards planetary health (Faerron Guzmán et al., 2021).

According to the International Council of Nurses (ICN, 2018), “nurses have a shared responsibility to sustain and protect the natural environment from depletion, pollution, degradation and destruction” (p. 3). The ICN “recognises the opportunity to take advantage of the massive potential to implement mitigation and adaptation policies that also have co-benefits to health” (2018, p. 3). Therefore, all nurses must be prepared to protect and preserve the planet and care for people whose health and wellness are threatened by planetary crises.

Discussion

Nurses must engage in the science and practice of planetary health. Research into planetary health concerns is essential for transdisciplinary efforts to create new knowledge, policies, action, and leadership (LeClair & Potter, 2022). Nurse educators can use the Planetary Health Education Framework to prepare students to support individuals, families, communities, and populations experiencing the planetary health crisis (Faerron Guzmán et al., 2021). To help advance the previously described work, the following narratives share exemplars of integrating planetary health into nursing education and research at the University of Minnesota (UMN) School of Nursing and the University of Wisconsin–Madison (UW–Madison) School of Nursing.

Nursing Education for Planetary Health

In 2021, the American Association of Colleges of Nursing (AACN) updated the guidelines and recommendations for professional nursing education using a new competency-based framework. This approach includes familiar nursing skills while delineating domains with competencies and sub-competencies to ensure nursing students demonstrate learning. In addition, the AACN also identified concepts to be threaded through the nursing curriculum across all courses, including clinical judgement; communication; compassionate care; diversity, equity, and inclusion; ethics; evidence-based practice; health policy; and the social determinants of health (AACN, 2021). As appropriate, these topics should be discussed and considered within all nursing courses as they are relevant to nursing care across all settings and roles.

Like nursing colleges around the United States, the UMN School of Nursing analyzed the current curricula for undergraduate and graduate programs to determine their alignment with the new AACN recommendations. This assessment revealed a knowledge gap and the recommendation that planetary health is an additional concept that should be threaded through all courses and discussed in relation to individual patient health and the health of communities, states, nations, and the planet (Flaten et al., 2023). Adding a single course on planetary health would address the impact of climate change across only some health sectors; therefore, planetary health was identified as an additional concept to be threaded through the entire curriculum. Threading was accomplished by doing a crosswalk between the concepts and competencies of the Essentials (AACN, 2021) and the five core domains of the Planetary Health Education Framework (Faerron Guzmán et al., 2021). These domains easily align with essential nursing roles and responsibilities. This approach to modifying the curriculum is being replicated by other schools across the United States, including the UW–Madison School of Nursing.

Planetary health threats and solutions impact all aspects of the health continuum. For example, undergraduate students will experience the impacts of climate change on patients and entire health systems. Doctor of nursing practice (DNP)-prepared advanced practice registered nurses will be ready to discuss climate change impacts with their patients and consider appropriate treatments for new and emerging pathogens. Additionally, DNP-prepared nurse leaders will learn how to lead decarbonization and waste reduction efforts and move towards systems that promote overall planetary health and wellness. Master's students can identify a unique contribution they can make to planetary health and commit to addressing the needs of the individual patient, community, state, nation, and planet for the health of present and future populations. Students in the PhD program can take an elective titled Planetary Health: Cross-Cutting Principles for Nursing Research. The course description is as follows: "Ecosystem transformations due to human activity have a serious impact on global health. Students will analyze scientific evidence and discuss ethics about the effects of ecosystem changes on human health. Opportunities for nursing research and theory development to promote planetary health will be identified" (Wilson et al., 2022, p. 3). Students identify opportunities for nursing research and theory development to promote planetary health. The students are introduced to the concepts of planetary health, one health, ecohealth, the Planetary Health Education Framework, the National Institute of Nursing Research (NINR) Strategic Plan, and the NINR Scientific Strategy. They are challenged to develop a nursing research question that builds on these resources and a personalized Translational Research Framework. The curriculum includes the introduction of human-caused ecosystem transformations and their health impacts within systems thinking (Iyer et al., 2021), as well as physiological measures, biomarkers, health inequities, and overburdened populations (Alvidrez et al., 2019; Lehnert et al., 2020; Morgan et al., 2022). All PhD students are prepared to develop their research through the lens of planetary health.

The UW–Madison School of Nursing introduced planetary health to students in the undergraduate program in a class titled Social Justice in Local and Global Settings. In this class, the social-ecological model was used to understand and implement nursing strategies that address the public health effects of our planetary health crises and promote solutions. In addition to a brief lecture and readings on planetary health and justice, the students put together a pitch for bringing the Nurses Climate Challenge to their current clinical site or their future place of work as nurses (Demorest et al., 2019). This resource, co-created by the Alliance of Nurses for Healthy Environments and Health Care Without Harm, supports students and nurses in providing training to other health professionals about climate and health. Additional planetary health concepts are

taught as exemplars throughout the undergraduate and graduate programs. For example, in the DNP program, students must read and discuss the necessary nursing paradigm shift towards planetary health (Kalogirou et al., 2020) and explore health inequities resulting from the intersection of overexposure to climate change and poverty.

The UMN and the UW–Madison schools of nursing participate in the Nursing Planetary Health Report Card initiative, developed by a team of international students and faculty (Hampshire et al., 2022). The student-led assessment of their nursing programs includes metrics that evaluate or “grade” curriculum, interprofessional and community collaboration, and administrative support for initiatives. This report card reveals strengths and uncovers opportunities for growth to advance excellence in planetary health education. Each school’s annual report card grades are published online and can be used to compare schools’ commitment to planetary health. This information can be used to inform faculty and administrators that their schools are meeting students’ expectations for planetary health education or that they have work to do. Through this student-led initiative, nursing students can feel empowered to create change in their programs that will benefit future nursing students.

Global Partnerships in Nursing Education

One method of learning about the triple planetary crisis is to submerge oneself in the literature and learn about the impact on nations and populations. Another method, if one has the resources and capacity to do so, is to travel to countries around the world to see these impacts firsthand. At the UMN School of Nursing, students in the DNP Program in Health Innovation and Leadership (HIL) expand their leadership skills and knowledge to address gaps in care, practice, and systems from the local level across the international and planetary levels. Faculty members in the HIL program lead several international education programs to expose students to the health care systems in Cuba and Iceland and discuss impacts on resources, food, and culture, affecting how humans can lead healthy lives.

In Iceland, UMN students engage in a one-week immersion with students from the University of Iceland to work on a global impact project while also exploring the cultural and natural resource differences of their countries of origin. Students are exposed to topics about the immediate threats of climate change while visiting the Perlan Museum. In this museum, the last remaining portion of the OK Glacier is displayed with a plaque:

OK is the first Icelandic glacier to lose its status as glacier. In the next 200 years, all our glaciers are expected to follow the same path. This monument is to acknowledge that we know what is happening and what needs to be done. Only you know if we did it. (Icelandic Perlan Museum, 2019)

Another global experience takes place in Cuba, where students learn how a country with minimal resources allocates them to create a national health care model based on prevention. The model relies heavily on individual and family illness prevention, with the system based on a nurse–physician dyad within the community. They develop relationships with the community and understand deeply the health of the individual, family, and home to address immediate concerns. Students also explore the impacts of climate change, policies including the embargo affecting national accessibility to resources, emergency preparedness, and data management. While only some students can travel during these international learning experiences, global topics are intentionally addressed throughout the doctoral program, including how to mitigate climate change and promote planetary health locally and globally.

Nursing Research for Planetary Health

As previously mentioned, the health impacts of the triple planetary crisis are distributed unfairly across populations. Racialized and low-income communities are overexposed to unjust conditions where they live, learn, work, and play (Clark et al., 2022; Heller et al., 2024). These conditions are known as the social determinants of health, which the Commission on Social Determinants of Health (2019) noted are shaped by structural factors, such as the distribution of money, power, and resources. The social determinants of health force communities to the “front lines” of climate disasters and “fence lines” of polluting industries (Bullard, 1994; Rockstrom et al., 2023). In the United States, worsening health inequities in front-line and fence-line communities include respiratory deaths, cardiovascular disabilities, and mental illness (Hayden et al., 2023).

The Planetary Health Education Framework noted that to “realize a more equitable planet requires eliminating systemic disparities—e.g., power, wealth, opportunity, or health status, so that no population carries disproportionate, avoid[able] burdens of environmental and health impacts while others are able to thrive” (Faerron Guzmán & Potter, 2021, p. 33). Marginalized communities (e.g., Indigenous, Black) have centuries of experience fighting for justice and are vital leaders in addressing planetary challenges (Bullard, 1994; Whyte, 2018). These communities continue organizing resistance to ongoing global and local colonial processes. Nurse researchers can promote planetary health by partnering with affected people whose expertise in solutions is grounded in lived experiences (Baptista et al., 2022; Faerron Guzmán et al., 2021).

Reclaiming Power and Place: Using Action Research to Address Gender-Based Violence Against Indigenous Women

Our first exemplar of a nursing research program at UW–Madison School of Nursing focuses on the intersection of Indigenous and planetary health, where one nursing researcher uses her voice as an Indigenous nurse scholar to highlight systemic racism, oppression, and injustice in response to survivors of gender-based violence among Indigenous women and against Mother Earth. Article 5 of the Universal Declaration of Human Rights (United Nations General Assembly, 1948) states, “No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment” (p. 2). Article 5 emphasizes that the right to live free from violence is one of human beings’ most fundamental rights. But this right to live free from violence is not always true for Indigenous women (Le May, 2018). Living free from violence should also be a fundamental right for Mother Earth. Environmental injustices are often gendered, including exploiting Mother Earth, resulting in catastrophic human consequences from exploiting colonized populations. However, the rights of Nature are not as widely recognized outside Indigenous tribal governments and communities.

The UW–Madison nursing researcher uses Indigenous-specific methodologies such as storytelling to gain a better understanding of Indigenous women’s lived experiences and, specifically, how women seek help after experiences of violence. This researcher’s work also aims to understand the impacts of extraction policies and projects in the upper Midwest and the linkages of environmental injustice, land violence, and gender-based violence. Themes from the research include personal, sociopolitical, and structural barriers to help-seeking after experiences of violence, connection to culture as a facilitator of healing, as well as community concerns regarding the crisis of missing and murdered Indigenous women and girls (MMIWG).

The violence against Indigenous women intersects with historical and contemporary injustices, mainly through the impact of settler colonial events and invasions that have historically used physical and sexual violence as a means of asserting power and control (Behrendt, 2022). The dispossession of land, detribalization, and the suppression of matriarchal teachings have perpetuated a cycle of interlocking body and land exploitation, emphasizing the critical link between body and land sovereignty in addressing colonial gender violence in Indigenous communities (Finney et al., 2019).

The violence that happens to Indigenous lands is inextricably linked to the violence that happens to Indigenous bodies. Indigenous Peoples have a deep connection with their lands because that connection has sustained their ways of life, traditional teachings, and values as Indigenous Peoples. The connection to the land has sustained and nourished their bodies with the foods and medicines that grow on the lands and the waterways, as well as a place to carry out their traditions and ceremonies and be in community with one another. The connection to land extends beyond mere “ownership” to instead embody a profound sense of stewardship and custodianship over the land and its ecosystems (Garnett et al., 2018).

The connection between land violence and body violence for Indigenous women is deeply rooted in historical injustices, ongoing colonial contexts, and intersecting forms of oppression. For example, Indigenous women and girls are affected disproportionately by violence, such as intimate partner violence, sexual assault, and homicide (Rosay, 2016). Despite the media’s recent commitment to highlight the MMIWG crisis, it is not a phenomenon that just began. Indigenous women and girls have been the targets of gendered violence since the earliest colonial contact (Casselman, 2016). The crisis of MMIWG is also inextricably linked to historically oppressive policies that stripped tribes of their inherent right to self-govern and protect their people. MMIWG is a phenomenon that is rooted in the continuation of ongoing colonial injustice exemplified through gendered violence against Indigenous women and girls and the violence against Mother Earth. For colonial oppressors, Indigenous bodies are there for their possession, just as they have stolen and possessed the land. Earth and body violence are inextricably linked and driven by globalization, capitalism, environmental violation, and land degradation to extract the precious natural resources beneath the Earth on or near sovereign tribal lands. Economic globalization has also been responsible for an influx of racialized and sexual violence, such as domestic violence, sexual assault, human trafficking, and homicide, because of the resulting economic inequalities in vulnerable communities and populations (Kuokkanen, 2008; Sweet, 2014). The combination of new and ongoing development in rural locations, the unnatural demographic shift of new workers moving to the north, and the lack of close monitoring in extraction project areas put Indigenous women at risk for harm (Sweet, 2014). Extraction project workers often bring an influx of income into communities that struggle with poverty. This has led to steep increases in sex trading, sex trafficking, domestic violence, homicide, and reports of missing Indigenous women and girls (Crane-Murdoch, 2013; Kuokkanen, 2008; Sweet, 2014).

Indigenous-led and survivor-led research is a form of activism and self-sovereignty and a way to centre the voices of survivors and those who have been silenced or who no longer have a voice. Indigenous-led research is also a way to highlight the continuation of colonial injustice that is manifested by high rates of violence; MMIWG; and experiences of racism, oppression, and poverty, and that exacerbate barriers to help seeking and justice for Indigenous women.

Marginalized Black Communities

The second research program exemplar at UW–Madison School of Nursing focuses on marginalized Black communities' experiences with overexposure to pollution, an aspect of the triple planetary crisis. Our founding colonial laws were written to establish social structures and social systems that can forever dominate, dehumanize, and disenfranchise Black men, women, and children as morally and biologically inferior labourers (Kirmayer et al., 2014). As health equity nurse researchers, we develop community-based strategies for health promotion to eliminate the chronic illness burdens of historical and contemporary colonialism (Cooke et al., 2022). We prioritize strength-based well-being by recognizing that individuals, as well as Black communities, can be marginalized by local and institutional policies and practices of colonialism today. Well-intentioned health promotion strategies to reduce high rates of community morbidity and mortality cannot overlook the well-documented illness burdens of social dominance through marginalization, such as high-effort coping (Hudson et al., 2023; Logan & Stults, 2011).

The illness burdens of marginalization, a unique form of chronic social stress, are compounded when social dominance policies and practices deem Black communities acceptable fence-line locations for environmental health hazards such as plastic factories, petroleum refineries, high-speed commuter highways, substandard construction, and deferred infrastructure maintenance that expose generations to toxic heavy metals, chemical run-offs, and air pollution (e.g., Hernberg, 2000). The most critical illness burden is evident in the ever-climbing rate of hypertension in Black communities, now approaching 60% (Sells et al., 2023; Thorpe et al., 2016). Decades of research and national health statistics show that the combination of environmental, social, and economic inequities and the chronic stress of marginalization help explain this unique population profile of hypertension in Black communities: younger age of symptom onset, longer symptom duration, and poorer treatment outcomes (Kim et al., 2018; Ogunniyi et al., 2021; Sells et al., 2023).

Our nursing research aims to identify reliable measures of positive psychological health in a marginalized Black community with high rates of social and environmental inequities that can inform a community-based strategy of heart health promotion (LeClair et al., 2024; Wisconsin Council on Children and Families, 2012). A secondary essential learning outcome is to add marginalization as a vital health concept in nursing for planetary health.

Nurse–Community Partnerships for Planetary Health

The long-term goal of our final exemplar research program at the UW–Madison School of Nursing is to improve the health status of populations most burdened by the triple planetary crisis. Nurses across many roles practise in communities that experience health inequities and partner with community-based organizations (CBOs) to improve various public health outcomes (American Nurses Association, 2022; American Public Health Association, 2013; Kulbok et al., 2012). These nurses hold untapped potential to address the health impacts of the triple planetary crisis. However, little has been documented about nurses' and their CBO partners' experiences within front-line and fence-line communities (Evans-Agnew et al., 2024; LeClair, Watts, et al., 2021).

This emerging research program addresses several gaps in the literature related to planetary health perspectives, strategies, capacities, and experiences of nurses and their community partners (LeClair, 2023). It includes a scoping review describing nurses' strategic actions to promote environmental justice through practice, advocacy, education, and research, as

reported in the peer-reviewed literature (LeClair, Watts, et al., 2021). To address the scoping review's identified need for nursing-specific theoretical frameworks in environmental justice and planetary health, we developed the Critical Environmental Justice Nursing for Planetary Health Framework (EJ Nursing Framework) (LeClair, Luebke, et al., 2021). The scoping review also identified the need to research the effects of environmental justice nursing interventions on community health. This research gap was addressed by conducting a qualitative study that used participatory photo mapping and semi-structured interviews to describe the perspectives, collaborative strategies, and partnership processes nurses and their CBO partners implement to advance climate justice (LeClair, 2023). Including the nurses' community partners in this study was also supported by the scoping review recommendations to centre the power of people most affected by environmental inequities in nursing community-based participatory research. Early findings from this study demonstrated potentially effective strategies and partnership processes utilized by volunteer and academic nurses and their CBO partners in front-line and fence-line communities to address the social and structural determinants of health, such as supporting neighbourhood flood resilience and holding corporate polluters accountable.

The scoping review and qualitative study are the first steps towards addressing fundamental nursing knowledge and practice gaps in promoting planetary health in front-line and fence-line communities. Public health nurses (PHNs) working in government settings also partner with CBOs to address the social determinants of health (Kulbok et al., 2012). However, PHNs report that more support is needed to address climate change impacts through their employment setting, and their specific capacity needs have yet to be identified for the triple planetary crisis (Polivka et al., 2012; Züst & Jost, 2022). In addition to determining the capacity needs of PHNs who work in government, findings from the previously described study identified a need to expand (a) the focus from climate justice to include pollution and biodiversity loss (i.e., the triple planetary crisis) and (b) the understanding of front-line and fence-line communities to include more than humans. PHNs' and their CBO partners' diverse planetary health values, knowledge, and skills must be better understood to determine how those internal factors influence their capacity to partner and promote planetary health in front-line and fence-line multispecies communities. The organizational, policy, and cultural factors that facilitate or create barriers to these nurse–community partnerships also must be explored to determine the external capacity needs of PHNs to promote planetary health through community partnerships. A subsequent study will establish the internal and external facilitators and barriers to enhancing and sustaining nurse–community partnerships for planetary health.

The Role of Academic Leadership in Planetary Health

Professional undergraduate curricula and graduate programs that prepare nurse leaders in research, practice, health systems, and population health can prepare students for nursing's role in planetary health today. However, there are notable challenges if nurse scholars are not strategically supported in this work. For example, academic nursing leaders who remain focused on teaching and researching only downstream patient-oriented interventions will miss the opportunity to educate nurses on strategies for addressing the upstream social and structural determinants of planetary health through community partnerships (Martin et al., 2023; Redvers et al., 2022). The National League of Nursing (NLN, 2022) vision statement, *Climate Change and Health*, strongly encouraged deans, directors, and chairs of nursing programs to

develop a strategic plan that ensures faculty expertise in climate and planetary health knowledge across all levels of nursing education, . . . ensure that the nursing curricula

across all levels of education address social and structural determinants of health and the concepts of justice, equity, diversity, and inclusion, [and] provide the necessary resources, funding, and opportunities to support faculty involvement in professional development for climate change and planetary health. (p. 8)

Yet some faculty may lack the institutional support to make the necessary changes. It is essential that nursing school deans explicitly affirm the need for planetary health content in the curriculum at all levels of nursing education. Merit and promotion committees that oversee annual reviews can acknowledge planetary health teaching and scholarship, as well as the time it can take for nurse researchers to authentically engage communities in planetary health promotion. These measures will help foster a culture in which planetary health is successfully embedded across all aspects of nursing education and research.

Conclusion

Nurses in academic settings are advancing planetary health and justice through research and education. The São Paulo Declaration noted, “Every person, in every place, from every calling, has a role to play in safeguarding the health of the planet and people for future generations” (Myers et al., 2021). People everywhere are realizing this. The knowledge that we are not separate from Nature but interconnected within Nature is already far more present than a few decades ago. More communities are reimagining how they live together, turning this knowledge into sustainable realities. We are seeing a resurgence of Indigenous power, a vision for resistance movements, and value paradigm shifts. Nurses and their community partners are champions for the waters, the forests, and all the sacred life within. Nurses have long recognized the profound impact of social and structural health determinants and advocated for protecting all life. Therefore, essential transitions towards planetary health require the global leadership of nurses. For this to occur, nurses must remember and reimagine who we are and hold a vision of what is possible. We must also be well supported so we can rise to our full potential.

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