

Planetary health: A pragmatic theoretical framework to guide nursing education, research, and practice[☆]

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ARTICLE INFO

Keywords:

Planetary health
Theory
Framework
Nurses
Climate change
Vector borne diseases

ABSTRACT

The term *Planetary Health* has been used in mainstream narrative in the past decades, but the term has only recently gained traction in nursing literature. Nurses are highly trusted and well-positioned to play an integral role in planetary health, by addressing the various challenges and health effects associated with planetary health decline.

Issue: While the traditional scope of nursing practice includes health promotion, and illness, injury, and disease prevention, planetary health incorporates broader issues such as climate change, pollution, biodiversity loss, resource scarcity, and marine degradation. Nurses may lack knowledge and confidence regarding planetary health issues, which may correlate to inadequate confidence and feelings of unpreparedness in practice. Therefore, planetary health presents as a pragmatic theoretical framework for nursing education, practice, and research.

Purpose: The purpose of this manuscript is to advocate for the applicability of planetary health for nursing practice, education, and research, incorporating an example of a research study that examined nurses' perceptions toward climate sensitive vector-borne diseases. Planetary health challenges are threatening human health globally, and nurses must be prepared to preserve human and planetary health.

1. Introduction

Vast improvements in global human health and development, from significant increases in literacy and life expectancy to drastic reductions in extreme poverty, have occurred over the last 70 years (Myers and Frumkin, 2020). Yet despite the advances in human health, the earth's biosphere is worse off than ever before in history, where humankind's ecological footprint has expanded substantially (Myers and Frumkin, 2020). Sadly, planetary health challenges are disproportionately felt by equity-deserving populations, including low-income countries, and Indigenous Peoples (Guzman and Potter, 2021).

Hence, it is timely that nurses are prepared for roles in promoting planetary health, as well as sustainable and equitable health care. In this paper, we present a discussion of planetary health as a theoretical framework for nursing, and the suitability of this framework to guide nursing research, education, and practice. An example of a current research study exploring the knowledge, attitudes, and practices of Registered Nurses (RNs) related to climate sensitive vector-borne

diseases (VBDs) is presented to highlight the applicability of planetary health to nursing.

2. Background

The term *Planetary Health* was first used within a Western context in 1972, emerging from a combination of preventative medicine, health promotion, and environmental health movements (Prescott et al., 2019). However, it was not until 2015 that planetary health literature exploded, following the Rockefeller-Lancet Commission on Planetary Health (Whitmee et al., 2015). According to Whitmee et al. (2015), planetary health encompasses the perception that human health and civilization depend on thriving ecosystems and stewardship of these systems.

Prescott et al. (2019) define planetary health as the intricate connection of human health to the vitality of natural systems of the Earth's biosphere. The interdependence of humans and the environment is central to planetary health (Whitmee et al., 2015). It encompasses a

[☆] This article is part of a Special issue entitled: 'Planetary health in nursing and midwifery education' published in Nurse Education Today.

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solutions-focused, transdisciplinary social movement, where the impacts of human activities on the natural systems are analyzed (Guzman and Potter, 2021). LeClair and Potter (2022) similarly state that planetary health is an evolving science and an expanding movement for change, and Guzman and Potter (2021) depict planetary health as a distinct domain of practice. At the core of planetary health is an awareness of the health impacts of global environmental disruptions and solution development that will allow humans and the ecosystem to flourish (Myers and Frumkin, 2020).

According to Myers (2017) and Myers and Frumkin (2020), planetary health is a relatively new field of research that recognizes simultaneous concerns for human wellbeing and biosphere degradation. Myers (2017) depicted the anthropogenic changes on human health in an illustration (see Fig. 1), where underlying factors such as steep growth in per capita consumption, demographic shifts including rapid population growth, and new technologies with detrimental environmental effects are transforming and disrupting ecological drivers and our planet's natural systems (Myers, 2017; Myers and Frumkin, 2020). Human activities are driving biophysical changes at unprecedented rates within six dimensions (Myers, 2017). The complex relationship between these dimensions results in altered air quality, freshwater accessibility, infectious disease contact, and food production, subsequently leading to natural hazards, such as heat waves, droughts, floods, tropical storms, and wildfires (Myers, 2017). Successive health impacts of anthropogenic changes include malnutrition, infectious diseases, non-communicable diseases, displacement and conflict, and mental health disorders (Myers, 2017). Mediating factors, such as good governance, financial resources, philanthropy, appropriate uses of technology, and cultural considerations can mitigate the overall health effects (Myers, 2017).

3. Planetary health in nursing

According to Potter (2019, 2021), every nurse must be knowledgeable in planetary health, and nursing leadership in planetary health is vital. Nurses, as trusted health professionals, will be sought out for guidance and support in mitigating planetary health threats, and their expertise in planetary-related health effects is desirable (Canadian Nurses Association (CNA), 2024; Liu et al., 2020). A recent scoping review on planetary health in nursing confirms that nurses have a significant role to play in planetary health, as evidenced by the numerous calls to action for nursing leadership and advocacy (Vandenberg et al., 2024).

Nurses can address planetary health calls to action by advocating for

equitable strategies and policy implementation on a global level (Astle et al., 2020). The nursing profession is grounded in social justice and health equity, which offers an opportunity for nurses to extend their advocacy efforts to include broader environmental concepts such as climate justice and planetary health (Catton, 2023; Martin and Kaminski, 2021). Nurses influence health at all levels of the socio-ecological model, from individuals and families to communities and populations. Population and global health are evolving, which provides opportunities for nurses to shift from a primary focus on human health to a comprehensive emphasis on planetary health (Rosa and Upvall, 2019).

While the traditional scope of nursing practice includes health promotion, illness and injury prevention, and health protection, planetary health incorporates broader issues such as climate change, pollution, marine degradation, food and water security, biodiversity loss, energy consumption, and mitigation of climate-driven infectious diseases (Kurth and Potter, 2022; Rosa and Upvall, 2019). Therefore, nurses should be guided by planetary action using a more inclusive approach to embrace the interdependence of humans, animals, and the environment, as well as critically explore anthropogenic disruptions to the earth (Rosa and Upvall, 2019). Undoubtedly, nurses have a key role in planetary health mitigation, to reduce planetary-related health threats (CNA, 2024; International Council of Nurses (ICN), 2018). Planetary health is a complex field, and there are global calls to action and numerous opportunities for nurses to engage in and advance planetary health. However, it can be difficult for nurses to transform the current model of nursing and health care overall, moving from illness care to planetary health care (Kurth and Potter, 2022; Martin and Kaminski, 2021). Despite these challenges, we urge nurses to consider the current environmental and health care context and become advocates for change through the development of new knowledge on this topic.

4. Planetary health as a theoretical framework

4.1. Nursing research

In their scoping review on planetary health in nursing, Vandenberg et al. (2024) found that original research on planetary health is lacking. There does not appear to be any published research incorporating planetary health as a theoretical framework. Therefore, we advocate for incorporating planetary health as a theoretical framework to guide nursing research on anthropogenic changes on both human and planetary health. Planetary health as a framework in nursing research would

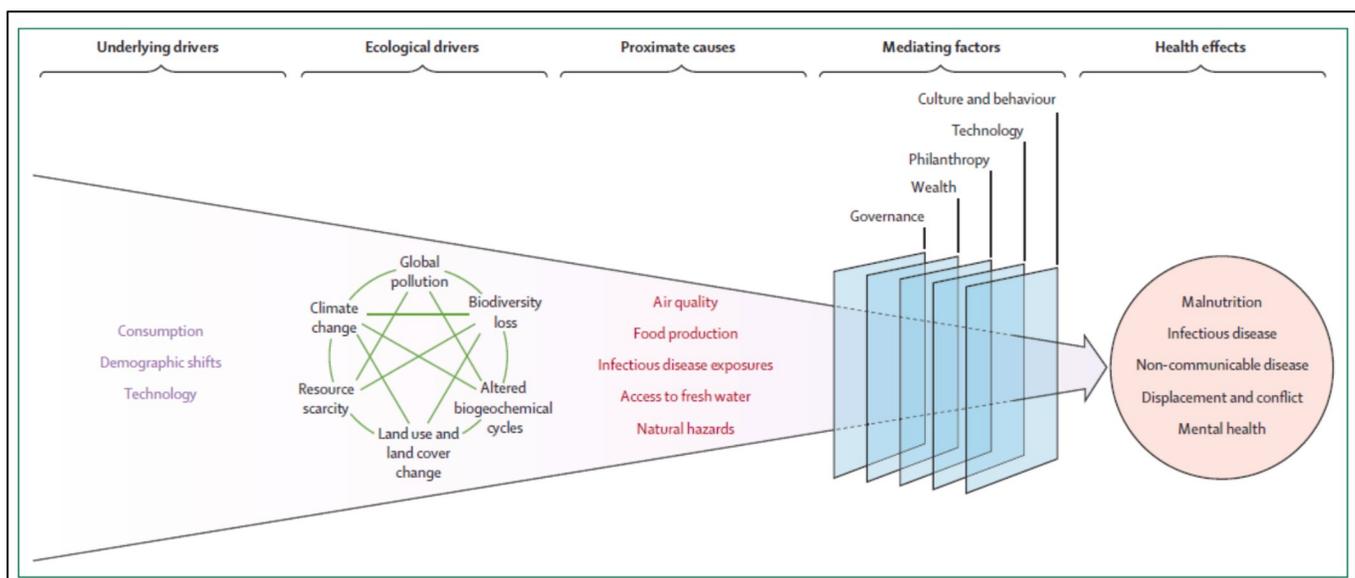


Fig. 1. Schematic illustrating impacts of anthropogenic changes on human health (Myers, 2017).

promote a shift toward health equity and systems thinking, recognizing complex interconnections between health, the environment, social systems, and policy.

Planetary health as a theoretical framework was incorporated in a recent research study the authors conducted on the knowledge, attitudes, and practices (KAP) of RNs toward climate sensitive VBDs. This research study contributes to overall nursing knowledge by providing baseline survey data on knowledge, attitudes, and practices of RNs toward climate driven VBDs within a planetary health approach. In this study, a cross-sectional survey was adapted with permission from Kircher et al. (2022), in their quantitative research on the understanding of the knowledge, attitudes, and practices of healthcare professionals toward climate change. While the survey from Kircher et al. (2022) focused broadly on climate change and health, it was chosen as it most closely aligned with the planetary health theoretical framework and research questions. Items were selected from the tool by Kircher et al. (2022) and modified to meet objectives of the current study.

Positioning the knowledge, attitudes, and practices of RNs toward climate driven VBDs in the conducted research offered an assessment of the extent to which nurses are practicing within a planetary health mindset, using the planetary health framework introduced by Myers (2017), as the survey aimed to determine how nurses view specific planetary health issues, such as climate change and infectious VBDs. The research aligned with components of Myer's (2017) schematic illustration of anthropogenic change on human health, where climate change is the ecological driver, which causes exposure to infectious disease (proximate cause), and subsequent health effects, such as infectious VBDs. Mediating factors, such as governance, culture and behaviour, and philanthropy can limit the consequences of the underlying and ecological drivers and limit negative health outcomes.

According to Myers and Frumkin (2020), there is clear data that climate change is affecting the distribution and prevalence of VBDs, such as Lyme disease, and many others around the globe. This awareness requires understanding of health promotion and disease prevention at various health levels, from individuals to populations (Guzman and Potter, 2021; Myers and Frumkin, 2020). Assessing the current knowledge, attitudes, and practices of RNs related to climate driven VBDs is timely, given the recent calls to action for nurses to be leaders in promoting sustainable planetary health. Planetary health as a theoretical framework in nursing research expands the discipline's mandate to address ecological and social determinants of health, promote environmental justice, and guide research that supports both human and planetary well-being.

4.2. Nursing education

To ensure future nurses are prepared for the changing reality of our planet and their expanded role of supporting and advancing planetary health, Canadian nursing schools have begun to incorporate a planetary health approach and climate change concepts into their curricula (Astle, 2024; Martin and Kaminski, 2021; Vandenberg, 2023). The integration of planetary health into nursing education is supported in the nursing literature, where Best et al. (2023) and Glauberman et al. (2023) highlight the need for national nursing organizations and education programs to integrate planetary health content into curricula. This call is echoed by Flaten et al. (2023) and Cygan et al. (2024), who advocate for the inclusion of planetary health concepts into core competencies for nursing education.

We advocate for the adoption of planetary health as a guiding theoretical framework within nursing education, ensuring that all curricular content is systematically designed and implemented through a planetary health lens. If planetary health were adopted as a theoretical framework for nursing education, it would fundamentally reshape how nurses are taught to understand health, illness, disease, and care within the broader ecological and social systems. Incorporating planetary health as a theoretical framework within nursing education would lead

to transformative change, where holistic knowledge about planetary health and subsequent challenges would be promoted using a levelled approach, with concepts integrated across courses. For instance, in a pathophysiology course, students would explore how climate change impacts VBDs. Within clinical practice, students could assess environmental exposure and community-level ecological risks of planetary health decline. Nursing program curricula would be grounded in systems thinking, ecological sustainability, and interdependence between human and planetary health.

A planetary health mindset can guide nurses in leading change in healthcare practice and mitigating planetary challenges. Likewise, Kalogirou et al. (2020) and LeClair and Potter (2022) suggest that a planetary health approach is necessary as the theoretical basis for nursing education. Fawcett's (1984) nursing metaparadigm depicts *environment* as a central pillar. However, Portela Dos Santos et al. (2023) maintain that nurses fail to conceptualize the term beyond their patients in practice. This mindset has prevented nurses from understanding their professional roles in mitigating environmental health issues. If planetary health became the theoretical framework for nursing education, future nurses would have a broader understanding of the term *environment* and would embrace their expanded scope of practice in caring for patients and the planet.

Furthermore, we advocate for enhanced curricular content on planetary health in nursing programs to better prepare nurses to address planetary health challenges in nursing practice, research, and through advocacy initiatives. Curricular modifications are recommended using planetary health frameworks to guide curriculum development. Myer's (2017) schematic on planetary health and the Planetary Health Education Framework (Guzman and Potter, 2021) are appropriate frameworks that align with nursing education and can be readily adapted into nursing curricula to ensure students are prepared for future practice, where an understanding of planetary challenges is essential. Additionally, we recommend that national nursing education frameworks and entry-to-practice nursing competencies are revised to include learning outcomes/objectives specific to planetary health.

5. Conclusion

We advocate for nurses to be planetary health leaders, through the integration of a planetary health approach into nursing research, education, and practice. Planetary health is a suitable and pragmatic theoretical framework, discussed in this manuscript through the example of a research study examining nurses' knowledge, attitudes, and practices toward climate driven VBDs. Recommendations for integrating planetary health within nursing education and research were provided. Given the current planetary health challenges and emerging planetary-related health threats globally, it is necessary for nurses to be educated in planetary health. This knowledge will aptly prepare nurses to embrace their expanded scope of practice to become leaders and advocates in planetary health.

CRediT authorship contribution statement

Shannon Vandenberg: Validation, Methodology, Investigation, Conceptualization, Writing – review & editing, Writing – original draft. **Tracy Oosterbroek:** Validation, Supervision, Writing – review & editing. **Andrea Chircop:** Validation, Supervision, Writing – review & editing. **Peter Kellett:** Validation, Supervision, Writing – review & editing.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

None to declare.

Data availability

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

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