

**If Not Us, Then Who?**

**A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses**

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## **Abstract**

The environment in which nursing occurs is interdependent and dynamic in relation to people and their health circumstances. Planetary health challenges, such as climate change, pollution, deforestation, overfishing, and habitat destruction, are disproportionately experienced in certain geographies and act as threat multipliers to the health, welfare, and security of human and more-than-human species. Nurses, by virtue of their position, are increasingly confronting the health implications of social and economic inequity when people and populations rendered vulnerable struggle to adapt to and mitigate environmental changes. Working near those who suffer, nurses must understand that human health is interrelated with planetary health. This awareness should inform their role as care providers who can develop solutions to face the unprecedented challenges now and in the future. The urgency to protect the environment is reflected among planetary health-conscious nurses who demonstrate a broad nursing perspective that includes caring for those in need, human and more-than-human alike.

The aim of this study was to interpret questions regarding the journeys, approaches, activities, and priorities of 14 registered nurses actively engaged in planetary health initiatives. A focused ethnographic methodology was employed, which included data from semi-structured interviews, participant observations, and arts-informed self-reflections. This data was analyzed using a reflexive thematic analysis to identify themes related to nurses' experiences and approaches to planetary health. The results of this research have the potential to inform practice, policy, education, and research within the nursing profession. Additionally, this research serves to highlight the importance of empowering nurses to engage in planetary health initiatives as advocates for social and environmental justice.

## **Dedication**

This dissertation is dedicated to my beloved parents, Shirley and Jim Cairns, who instilled in me the values of perseverance and caring for one another.

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## **List of Abbreviations**

ANHE	Alliance of Nurses for Healthy Environments
CANE	Canadian Association of Nurses for the Environment
GHG	Greenhouse gas
ICN	International Council of Nurses
IPCC	Intergovernmental Panel on Climate Change
ONEIG	Ontario Nurses for the Environment Interest Group
PO	Participant observation
UN	United Nations

## Glossary of Terms

<b>Term</b>	<b>Definition</b>
<b>Anthropocene</b>	A new geological era shaped by deep interventions into nature by humans as biological and geological agents (Crutzen & Stoermer, 2000).
<b>Capitalocene</b>	A period characterized by the way capitalism shapes economies and environments, leading to ecological degradation (Moore, 2017).
<b>Climate change adaptation</b>	The process of adjustment to actual or expected climate changes and their effects (Intergovernmental Panel Climate Change [IPCC], 2018a).
<b>Climate change</b>	Significant and distinct changes in measures of climate that persist for more than a decade (IPCC, 2018a).
<b>Climate change mitigation</b>	Methods to prevent or reduce strain on the planet as a result of greenhouse gas emissions (IPCC, 2018a).
<b>Climate justice</b>	The ethical and human rights issues that occur as a result of climate change (IPCC, 2018a).
<b>Dasein</b>	Awareness of one's existence characterized by being-in-the-world; it is unique among humans in the capacity to question one's being and the meaning of existence (Heidegger, 1962).
<b>Deformation professionnelle</b>	A tendency to see things from the viewpoint of an occupational bias or a professional specialty (Barrett, 1958).
<b>Determinants of health</b>	Factors including the social and economic environment, physical environment, and a person's individual characteristics and behaviours that influence their health outcomes (World Health Organization, 2017).
<b>Ecological consciousness</b>	An awareness and understanding of the interdependence between humans and the natural environment that guides behaviours toward sustainability and conservation of Earth's resources (Biriukova, 2005).

<b>Ecology</b>	A subdiscipline of biology concerned with relationships between organisms and their environment. Its purpose is to explain the organization of nature in terms of survival, growth, development, and reproduction using descriptive, experimental, and theoretical approaches (IPCC, 2018a).
<b>Ecosystem</b>	One physical system where a biological community of interacting organisms relates within their physical environment (IPCC, 2018a).
<b>Environment</b>	Physical entities within the place where an organism lives and its surroundings, both living and non-living (Smith, 1966).
<b>Environmental justice</b>	A concept that all people and communities, regardless of their race and socio-economic status, are entitled to enjoy an equally clean environment and resources (IPCC, 2018a).
<b>Environmental literacy</b>	A wide range of skills that can help people understand, assess, and use environmental health information (Chepesiuk, 2007).
<b>Environmentally responsible nursing</b>	An aim to provide good care with minimal environmental harm (Kallio et al., 2020).
<b>Focused ethnography</b>	A problem-focused, context-specific, and time-limited exploratory qualitative research study conducted among a small number of participants (Cruz & Higginbottom, 2013).
<b>Functional</b>	The practicality and usefulness of a special activity, purpose, or task; relating to the way in which something works or operates.
<b>Global citizenship</b>	A broad term for the social, political, environmental, and economic actions worldwide of globally minded people and communities (United Nations, n.d.a).
<b>Holistic nurses</b>	Nurses who employ evidence-based care to promote health equity while considering social, environmental, economic, and physiological determinants of health (Rosa et al., 2019).
<b>More-than-human</b>	The interconnectedness of human and non-human entities, such as animals, plants, and inanimate objects, within a holistic and ecological perspective of nature (Abram, 1997).
<b>Planetary health</b>	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 (Planetary Health Alliance, 2023).

**Pragmatism**

A philosophical approach or assumption that prioritizes practical consequences and real-world applications as the key criteria for determining meaning, truth, or value (Bernstein, 2010).

**Sacred activism**

A form of activism that is rooted in compassion, love, understanding, and a deep respect for all life, which compels individuals to act against injustices and work toward a more balanced and harmonious world (Harvey, 2009).

## **Chapter 1: Introduction**

As a registered nurse, I have always been challenged to reconcile my role as a health care provider with the environmental impact of health care practices such as medical waste and pollution. Throughout my career, climate change has been a significant threat to sustaining diversity of life on Earth, yet health care systems contribute significant greenhouse gas (GHG) emissions that are responsible for climate change in the first place. The history of nursing is grounded in environmental and social advocacy, which has left me to wonder how can nursing, a profession that holds caring as an essential quality, be practised in ways that care for and protect all life on Earth now and for future generations?

Through my reflections on caring, the environment, and nursing, I have come to acknowledge my cognitive dissonance working within health care environments. In hospitals, I have often felt physically, emotionally, and spiritually disconnected from what I experience and know about myself in nature. While the environmental impact of nursing is a source of moral distress, it is my state of feeling disconnected that has significant implications for the possibility of environmental action through my nursing practice. Questions about being a nurse and doing nursing work congruent with supporting planetary health are the basis of this research dissertation.

In this introductory chapter, I provide the context for this dissertation study. I start with a background section to describe the issues associated with planetary health and how nursing must be mobilized for action. The significance of this study is to identify nursing exemplars for planetary health while the study's purpose is to highlight the importance of the intersubjective voices and actions of nurses in the face of planetary health challenges. I also describe the context

for my interest in this work and the theoretical scaffolding that emphasizes nurse caring. I conclude the chapter by outlining the research goal, objectives, and questions that guide this project.

This dissertation is divided into six chapters. Following this introductory chapter, in Chapter 2 I review the literature that examines nursing and planetary health. In Chapter 3, I outline the research methods used throughout this study. In Chapter 4, I present the findings from interviews, participant observations, and arts-informed participant self-reflections. In Chapter 5, I provide an analysis of my research findings. Finally, in Chapter 6, I discuss the themes and sub-themes introduced in the previous chapters and relate them to the literature. I also share implications and recommendations for nursing practice, policy, education, and research, and finish with the study's limitations and a conclusion.

## **Background**

We have a unique capacity as humans to learn from the historical records of past civilizations and expose the fragility of sustainability within the rise and fall of human endeavour over time (Wright, 2004). Rachel Carson's (1962) book *Silent Spring* initiated a global environmental consciousness by raising awareness about the effects of pesticide use and their impact on the natural world. Carson's work highlighted the interconnectedness of the environment and human health and inspired groundbreaking environmental protections. However, even with our human capacity to anticipate vast climate and ecological changes, there is currently no effective political response among affluent westernized industrial states that is capable of averting climate crisis and ecological catastrophe within a global average temperature rise of 1.5°C (Bendell, 2019; Figueres et al., 2017; Haines & Ebi, 2019). What we do or do not

do now as individuals and as a collective of global citizens who seek to understand the interconnectedness of social, political, environmental, and economic actions worldwide, will determine our ability to adapt and mitigate Earth's impoverishment from a legacy of consumption and exhaustion of the natural world (Butterfield et al., 2021; Cesario, 2017; United Nations, n.d.a).

Certain forms of human activity are drastically reshaping the climate and ecological systems that sustain life on Earth. Indeed, Earth's natural systems are under threat by the impact of human activities. The concept of planetary health is based on a recognition that human impacts, primarily in industrial societies, risk exceeding planetary boundaries for the environment to self-regulate thereby creating instability for climate and ecological conditions on Earth (Rockström et al., 2009). The nine planetary boundaries are: climate change, ocean acidification, stratospheric ozone, biogeochemical nitrogen, global freshwater use, land system change, biodiversity loss, chemical pollution, and atmospheric aerosol loading (Rockström et al., 2009). In particular, climate change is a planetary health challenge that is influenced by increased atmospheric concentrations of GHG that raise surface temperature on land and trap heat in oceans thereby altering the planet's long-term climate and weather patterns (IPCC, 2018b). Furthermore, the extraction and consumption of fossil fuels by westernized industrial states are a significant cause of GHG emissions yet vulnerable populations in the global South, who are the least responsible for such emissions, are most likely to suffer the consequences of climate change (Haines & Ebi, 2019; Mortillaro, 2019). While GHGs are a global problem, affluent countries contest the notion of legal responsibility to help compensate more vulnerable and disproportionately affected nations of the global South (Moore, 2017; Nand & Bardsley, 2020;



Wright et al., 2018). Without deep and immediate reductions to GHG emissions, scientific modelling indicates a future of accelerated change to weather patterns and rainfall distribution that are considered uncontrollable within Earth's natural systems (IPCC, 2018b; Steffen et al., 2018).

Within this context, the health care sector is a major contributor to GHG emissions, waste, and toxic chemicals (Kangasniemi et al., 2014). Increasingly, health care professionals are demonstrating leadership in raising the alarm about the environmental impacts of anthropogenic challenges to human health and wellness, such as pollution of land, water, and air, food shortages, vector-borne and zoonotic diseases, cancer risks, and risk of violence (Cook et al., 2019; Eckelman & Sherman, 2016; Levy, 2019; Lilienfeld et al., 2019; Nicholas & Breakey, 2017; Schenk, 2019.). Health care disciplines such as nursing have primarily focused on supporting the immediate environment of a patient's surroundings, rather than applying a larger environmental perspective to their practice (Bender, 2018; Lausten, 2006; Thorne et al., 2002). Likewise, nursing education has not focused on the interdependence of natural systems, such as the atmosphere, water, and land, as an ecological conceptualization of the environment that emphasizes the coexistence of humans within nature (Estévez-Saá & Lorenzo-Modia, 2018; Lausten, 2006).

Providing nurses with the knowledge and skills to support planetary health requires an ecological awareness within health education and inclusion of the broader social and environmental implications of climate change that will inform the future of nursing practice (Butterfield et al., 2021; Hanley & Jakubec, 2019; Larson, 2006). Planetary health is defined 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” (Planetary Health Alliance, 2023). The origin of that definition is based on the Lancet Commission on planetary health that speaks to “safeguarding human health in the Anthropocene epoch” (Whitmee et al., 2015, p. 1). Planetary health has emerged as part of a shift in thinking among researchers within the health and environmental sciences to reflect a more integrated understanding in the relationship between human health and the health of the environment in recognition of the planet’s limits to human impacts (The Authors, 2019). I refer to planetary health throughout this dissertation as a way of representing a broad view of health for nursing, one that emphasizes the importance of natural ecosystems for sustaining human health in a way that is inclusive of all life forms. Additionally, this research refers to planetary health challenges as the interconnected global environmental problems such as GHG emissions, pollution, and biodiversity loss.

The history of nursing’s social and environmental advocacy is described in the writings of Florence Nightingale who recognized the environment as foundational for health and that it must be protected and treated with respect to protect public health (Beck & Dossey, 2019). The Nightingale Initiative for Global Health aims to inspire a new generation of nursing advocates to engage with planetary health challenges (Beck & Dossey, 2019; Lilienfeld et al., 2018). “We are that generation of 21<sup>st</sup>-century Nightingales and health diplomats. We must tell nurses’ stories beyond nursing and see ourselves as health journalists and social media communicators to transform health care...” (Dossey & Beck, 2012 p. 9). There are increasing calls throughout the nursing profession for an intergovernmental response to climate change and for nurses to actively participate in planetary health awareness and education (Hanley & Jakubec, 2019; Kerr et al.,

2019; Morgan, 2019; Yang et al., 2019). Advocacy efforts within nursing organizations to mitigate and adapt to climate change involve policy papers, position statements, and calls for governments to take urgent action (Canadian Nurses Association, 2022; Alliance of Nurses for Healthy Environments, 2018; Canadian Association of Nurses for the Environment, n.d.; International Council of Nurses, 2019). Perhaps this is a defining moment in which the nursing profession can reimagine its historical connection to environmental advocacy and the social and ecological imperatives for change we now need.

### **Significance of the Study**

Nurses are uniquely positioned within the communities they serve to embody care and compassion through service (J. Watson, personal communication, October 1, 2019). Supporting planetary health is significant for the nursing profession because the associated issues of social justice, the health implications for vulnerable and marginalized populations, and the imperative for planetary health are shifting the context in which nursing is practised (Nicholas & Breakey, 2017; Potter, 2019). The promotion of health and wellness through nursing is increasingly less predictable in rapidly changing health care environments where climate change has the potential of reversing 50 years of public health advancement (Costello et al., 2009). Nurses who are oriented to the current and projected issues affecting planetary health are needed to lead adaptation and mitigation efforts in communities worldwide (Kerr et al., 2019; Yang et al., 2019). This study is significant for understanding nurses who exemplify a commitment to planetary health through their nursing practice. Raising awareness and knowledge among nurses to challenge the status quo within the profession and to see nursing as an expression of climate and ecological action could inform a larger social and environmental mandate in the minds of nurses.

## **Purpose of the Study**

The purpose of this research has been to gain a greater understanding of nurses' perspectives in responding to planetary health challenges in ways that may identify broad implications for the future of nursing education, research, practice, and policy. Specifically, this research explored the journeys, approaches, activities, and priorities of nurses who care for both the environment and the people they serve. Within the context of planetary health as essential for human and more-than-human health and welfare, I have sought to understand nurses who support planetary health in their day-to-day activities through involvement in large and small actions, and how they used their local, regional, and national networks.

## **Context for My Interest in This Work**

Being outside in nature has always been important to me. Camping in particular has had a huge influence on my life. When I began to consider career choices, I originally considered forestry and ecology but came to nursing after volunteering in a hospital emergency room, talking to my aunt who was a registered nurse, and training as a medic for the Canadian Armed Forces Reserves. I chose to pursue a degree in nursing at McMaster University because the program focused on small-group problem-based learning that fit well with my learning style. Nursing was a practical decision that would open many possibilities, but it was also a compromise to my interest in working outside in nature. I distinctly remember my first clinical experience in my white uniform trying to remove summer camp bracelets that would not come off my wrists. The tiny beads scattered across the hospital floor as I broke the bracelets. I now reflect on this memory as the symbolic moment when I left a significant part of myself behind in preparation for clinical nursing practice.

As a younger adult, I took interest in learning about environmental issues such as old-growth forest protection and pollution. I became aware of global warming in my last year of high school and have a vivid memory of a presentation by environmental activist and educator Steve Van Matre who discussed a 30-year window of opportunity to stop global warming. I have lived in the anticipation of an unpredictable climate future and my early career choices as a travel nurse were a way to enjoy life in the present and explore different regions and communities in Canada and abroad. While pursuing my nursing career, I became an Ontario-certified teacher and Outward Bound Canada instructor, which allowed me to lead youth wilderness courses. I continued my interest in environmental issues by participating in the Muskoka Watershed Council and the Ontario Nurses for the Environment Interest Group (ONEIG). In 2015, I led a successful municipal declaration for Muskoka in supporting rights to a healthy environment in conjunction with the David Suzuki Foundation. In pursuing this PhD, I selected graduate courses in environmental education, environmental health policy, disaster management, and knowledge mobilization. The multidisciplinary nature of my life's experiences informs a unique position for nursing scholarship and have led me to ask research questions that reimagine my nursing practice in relation to others who are bearing witness to the challenges facing our planet.

In forming the research questions for this project, I thought about where I come from and what I care about. I acknowledged how my privileged position as a graduate student has given me an opportunity to contemplate nursing and my own awareness and knowledge of planetary health. As a nurse researcher from the socio-political construct of Western democracy based on a history of European colonialism (Strega & Brown, 2015), I recognized that I am a complicit benefactor of this construct. I am afforded the moral status to experiment in nursing research

while remaining fossil fuel dependent within a social, political, and economic system that continues to negatively affect planetary health (Dillard-Wright et al., 2020). The contradiction of my privilege within the unsustainable dependency on fossil fuels was a starting point from which I sought to unpack my awareness of this work and grow reflexively in my understanding of how I can be part of planetary health solutions.

Through the reflexive process of contemplating my nursing practice and reviewing nursing briefs and literature, I have come to consider that nurse caring from a planetary health perspective has the potential for meaningful collective action to mitigate and adapt to planetary health challenges. In my view, planetary health-conscious nurses are social actors of caring who recognize a broader perspective that includes protecting those in need, human and more-than-human alike. With this in mind, I reflected on several questions to guide the development of this inquiry. For example, are there nurses who exemplify caring from a planetary health perspective, and could they empower others? How do planetary health-conscious nurses integrate their knowledge and thoughts into practice? Where are planetary health-conscious nurses located, and in what activities are they involved? What are the structural or professional barriers such nurses face? These questions about caring among planetary health-conscious nurses have driven this research inquiry and reflected my journey in seeking meaning through nursing work in the current context of planetary health challenges.

### **Theoretical Scaffolding**

In this research, I sought accurate meaning in an interpretation of how nurses express planetary health practices while facing the challenges of planetary health. Accurate meaning refers to my interpretive emphasis that rigorously questioned the social construction of

knowledge. I situated myself within this research experience, not as a separate subject from it. I was inspired by the central premise of *Dasein*, as expressed by Martin Heidegger, that acknowledged the researcher as an observer within the subject being observed “to grasp its objects in such a way that everything about them which is up for discussion must be treated by exhibiting it directly and demonstrating it directly” (Heidegger, 1962, p. 59). *Dasein* is a German word Heidegger often referred to as “being-there” or “being-in-the-world” (Heidegger, 1962, p. 27). *Dasein* as a concept helped me understand the nature of human experiences in their complexity. As humans we have the ability to understand, interpret, and make meaning out of our existence and the world around us. In this way, my ontology and epistemology assumed meaning and understanding cannot be understood outside of the context in which it is lived. Heidegger rejected the notion of an objective reality separate from the observer (Heidegger, 1962). As a qualitative researcher, I sought to interpret meaning of lived experiences by sharing in the intersubjective views, opinions, emotions, and values of individual research participants (Creswell & Creswell, 2018; Polit & Beck, 2017).

Nurses are uniquely positioned within communities as caring professionals in the work that they do. As a nurse, researcher, and parent concerned about planetary decline, I sought to interpret the lived experience of nurses who care about planetary health and how that attribute is implemented into nursing practices. To do this, I centred on the notion of caring. It is an integral professional nursing value and guiding force that influences how nursing is explained and how nurses are expected to practice. Caring can be defined as “a feeling and exhibiting concern and empathy for others, showing or having compassion” (Collins English Dictionary, n.d.). Human caring is an experience within all of us; it transcends time and space and offers a foundation from

which an evolving critical social consciousness can occur. Cook and Peden (2017) summarized a variety of nursing theoretical perspectives on caring including a quality exhibited by nurses, a moral imperative, a means to safeguard life, or a requirement for ensuring the preservation of human dignity. Similarly, Watson's unitary caring science is a theoretical approach that seeks to deepen and reinforce the seriousness of caring and compassion as an ethical endeavour within nursing practice (Watson, 2008; 2018). Watson highlighted the significance of nurse caring from a holistic perspective in order to cultivate practices that contribute to the preservation of humanity (Watson, 2008; 2018); this was particularly relevant to informing this research project.

Related to caring, Watson also referred to an ethic of belonging as a grounding before an ontology of our being "we all belong to an infinite field of cosmic love, we come from it and return to it" (Watson, 2017). Watson described ways of being and becoming as an evolving consciousness of caring through humanity, one that connects us to all people and within nature as a sacred circle of life (2008). This scientific underpinning of sacred action has been articulated as a purposeful shift from clinical objectivity toward "authentic subjectivity/intra/inter-subjectivity and beyond" (Watson, 2018, p. 3). Sacred action in this sense represents the interdependence of human and more-than-human life and allows for serious consideration of multi-species entanglements in public life (Rock, 2017). Scaffolding such an ethic of belonging throughout this research project has helped me encounter the challenging nature of the subject matter and to be with rather than separate from the research participants.

In addition to the notions of caring and belonging, Watson also described the potential for a "critical caring consciousness" in which nurses are compelled to act from a holistic perspective so that a "change in a part, is a change in the whole, (J. Watson, personal communication,



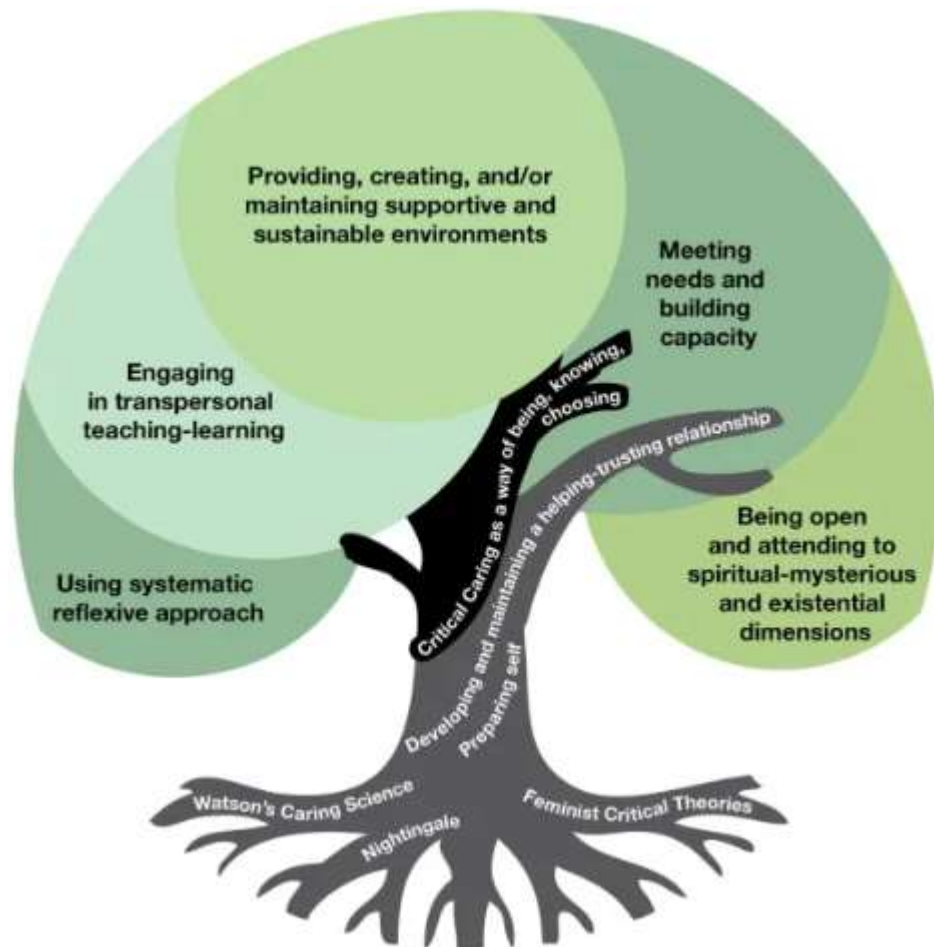
September 30, 2019), thereby enacting social transformation toward shared environments. Paulo Freire (1998) referred to a critical consciousness among individuals as a perspective that seeks to recognize social, political, and economic structures that shape society and to act on them for social justice and transformation. This research project sought to provide a holistic interpretation of nurses engaged in planetary health activities and value the non-linear dynamics and the sensitive dependence on initial conditions among research participants making small changes in one state (as people) toward large differences in a later state (in society) (Lewis, 2001). Nursing as the embodiment of “love and caring united for healing” (J. Watson, personal communication, October 1, 2019) reflected the potential for non-linear relationships in the work of nurses as sacred activism. Nurses who are empowered to act for social change can gain perspective through disciplinary knowledge in nursing. For example, within public health nursing Falk-Rafael (2005) described a “critical caring perspective” that is based on the integration of Florence Nightingale’s legacy of social activism, Watson’s unitary caring science, and feminist perspectives (p. 38). Critical caring theory as proposed by Falk-Rafael (2005) puts forward capacity building, consciousness raising, supportive environments, trust, and self-preparation as requisite ingredients to shift caring from the traditional sense to an empowered holistic approach. Critical caring is seeing issues of social and environmental concern and giving voice to those affected by speaking out on social and environmental justice issues (Chinn & Falk-Rafael, 2018).

Critical caring theory is relevant to this study as a perspective for the conceptualization and enactment of nursing that advocates for the enablement of individuals and communities to reach their full potential (Falk-Rafael & Betker, 2012). There are four tenets of critical caring conceptualized as a way of being (ontology), knowing (epistemology), choosing (ethics), and

doing (praxis). These tenets are expressed through seven carative health-promotion processes derived from Watson's original 10 carative factors (Falk-Rafael, 2005). Falk-Rafael (2005) applied critical caring as a model to bring the elements of the theory into focus shown in Figure 1 below.

**Figure 1:**

*Critical Caring Theory Model (Falk-Rafael, 2005, 2018)<sup>1</sup>*



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<sup>1</sup> Falk-Rafael's critical caring theory model from [Nursology](#) used with permission.

The seven carative health-promotion processes are referred to as ontological competencies that emphasize caring as a relational way of being (Falk-Rafael, 2005). These seven processes with examples are:

- Preparing self (e.g., learning to be aware of the context and recognize the power dynamics in a given situation).
- Developing and maintaining a helping-trusting relationship (e.g., active listening, being respectful of other views, creating safe and supportive environments).
- Using a systematic reflexive approach (e.g., demonstrating critical inquiry, scholarship in learning).
- Engaging in transpersonal teaching-learning (e.g., social activism, direct action, or advocacy for the mitigation of planetary health challenges).
- Providing, creating, or maintaining supportive and sustainable environments (e.g., inspiration to patients, communities, or health care institutions to engage in climate change mitigation activities).
- Meeting needs and building capacity (e.g., knowledge networking, collaborating in the development of local, provincial, or national climate change policy or research).
- Being open and attending to spiritual-mysterious and existential dimensions (e.g., connecting in nature, spiritual/mystical experience beyond Earth into the cosmos).

Critical caring emphasizes the importance of understanding nursing practice holistically in the context of social and environmental justice in order for nurses to take action to improve the health and wellness of people and populations. Throughout this research, I have reflected on

the theoretical concepts of critical caring to consider how a deepening social and environmental consciousness can support planetary health.

### **Research Goal**

Through an analytical lens of critical caring, the goal of this research was to explore the journeys, approaches, activities, and priorities of nurses who are engaged in the issues of climate and ecological crisis to identify nursing perspectives on how adaptation and mitigation efforts are experienced by nurses that inform the knowledge and practice of nursing.

### **Research Objectives**

This research aimed to address the following research objectives:

1. To critically appraise current literature, reports, and initiatives related to nursing engagement with issues pertaining to ecological and planetary health.
2. To explore the journeys, approaches, activities, and priorities of nurses who are engaged in planetary health.
3. To observe how ecologically conscious nurses within organizations embody their focus on environmental issues.
4. To explore how an arts-informed participant self-reflection by nurses who are engaged in planetary health can provide perspective on nursing involvement in global and planetary health concerns.
5. To identify broad implications of a planetary health perspective among nurses for future nursing education, research, practice, and policy.

## **Research Questions**

This dissertation was guided by the following research questions that also corresponded to each of the three data collection methods used in this study:

1. How are nurses involved in planetary health experiencing their journeys, approaches, activities, and priorities for action concerning planetary decline as a crisis facing humanity?
2. In what ways do/can nurses embody their participation within organizations focused on issues of planetary decline?
3. How do the participants view themselves as nurses and the work of planetary health within an arts-informed participant self-reflection?

## **Conclusion**

In this introductory chapter, I provided the broad context for this dissertation. I described the issues associated with planetary health and how nursing must be mobilized for action. I explained the significance and purpose of this study to identify nursing exemplars for planetary health. I also described the context for my interest in this work as well as the theoretical scaffolding that emphasizes nurse caring. Finally, I outlined the research goal, objectives, and questions that will guide this project in the chapters that follow.

## Chapter 2: Literature Review

The human impact on planetary health is driving many different social and political conversations to which nursing scholarship is a contributor. The nursing profession is growing in awareness to challenges such as climate change and the complex interactions between ecological systems and human health. Nurses have always given voice to those who suffer (Watson, 2020) and the implications of climate change among vulnerable populations<sup>2</sup> is a significant call for action throughout the profession. To support and lead transformative change in society, nurses require planetary health knowledge and skills (Mundie & Donelle, 2022). Ecologically minded nurses are envisioning nursing care for individuals, communities, and the planet as a common ground for understanding that planetary health is essential for human health (Rosa et al., 2019; Terry et al., 2019).

Within this context and as a starting point for my research, I reviewed the available literature on how planetary health is constructed and understood in the context of nursing with the goal of illuminating how nurse scholars are defining, engaging, and envisioning nursing knowledge and practice in a growing awareness of planetary health decline. I start this chapter by providing a literature review search strategy and synthesizing article content into seven sections. These are planetary health challenges and impacts, nursing awareness, professional values clarification, reconceptualizing nursing's foundation, nursing's paradigm of environment, nursing action, and organizations and policies. The chapter closes with a summary of the literature.

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<sup>2</sup> Populations rendered vulnerable through structural policies and practices that influence socioeconomic or environmental conditions.

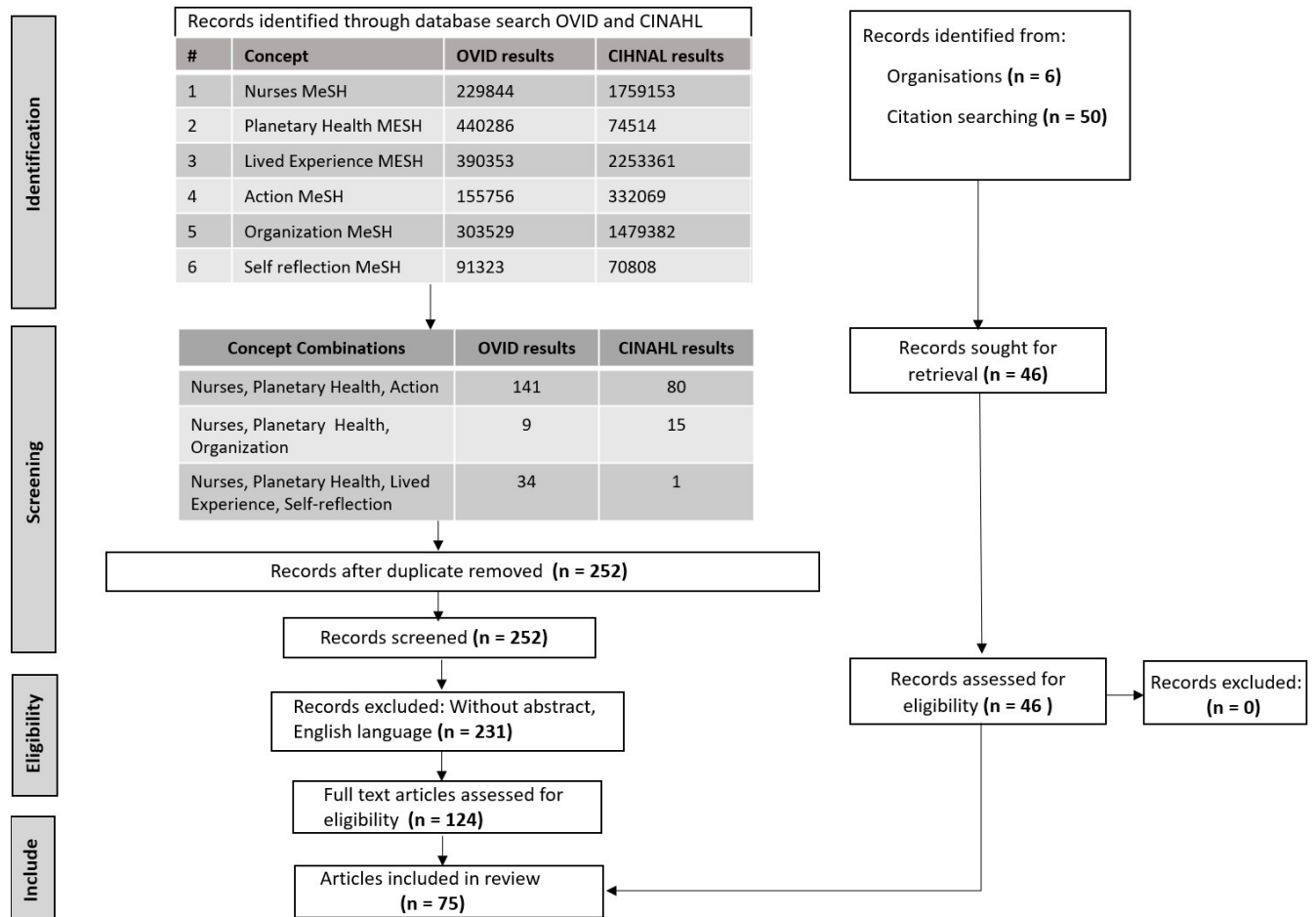
## **Literature Review Search Strategy**

I employed a systematized literature review method to extract and explore peer-reviewed nursing articles (Grant & Booth, 2009) for this literature review. I chose this method because it modelled elements of a systematic review process but was suited for my work as a single researcher in two databases. Therefore, this review was rigorous but not as comprehensive as a systematic review method.

To begin, I extracted and colour coded keywords from my research questions and reviewed relevant MeSH concept headings, which included nurses, planetary health, lived experience, action, organization, and self-reflection (see Appendix 1). I identified nursing literature sources through a search of PubMed and CINAHL and manually located additional sources through reference lists and relevant websites. The six MeSH concept headings relevant to my research question keywords and their synonyms as well as preliminary database results are shown as a PRISMA model in Figure 2 on the next page.

**Figure 2:**

*Selection Process Flow Chart (PRISMA Model)*



I then applied Boolean operators and truncations to combine the terms as research question subsets (see Appendix 2). A summary of the keyword concepts as MeSH headings and database search results of MEDLINE with OVID filters are presented in Appendix 3. I also presented my translation search strategy from MEDLINE (via OVID) to CINAHL in Appendix 4. Next, I applied exclusion criteria to remove articles without abstracts and those written in any language but English from 1976 to 2020. I continued searching and reviewing the literature until July



2023. Finally, I screened the remaining articles for descriptions that addressed nurse engagement, nursing organizations, and nurse actions relevant to planetary health.

To review articles, I used a narrative synthesis method and inductively read and interpreted the content of each article and hand coded the article segments (Grant & Booth, 2009). I used the software program NVivo 12 to manage sources and to provide structure for the coding of article segments (Leech & Onwuegbuzie, 2011). Moving back and forth within the coding structure, I employed an iterative process to identify relationships within and between codes, to form code categories, and finally to identify the seven main headings of this literature review that I now discuss.

### **Planetary Health Challenges and Their Impacts**

Nursing literature, particularly within the past 10 years, has reflected a growing awareness and concern of nurses toward planetary decline. Scholars have shown that nurses are generally aware that climate change is accelerated by human activities that emit GHGs (Campbell, 2008; Lefers et al., 2017; McDermott-Levy et al., 2019; Nicholas & Breakey, 2017) and that they are also becoming more aware of the impacts on human health and how increases in GHG emissions will contribute to significant future challenges (McDermott-Levy et al., 2019; McDermott-Levy & Fick, 2020). Emphasis on nursing awareness within the literature can be grouped into the direct and indirect impacts on human health, particularly of populations rendered most vulnerable due to climate change impacts.

#### ***Direct Health Impacts***

Scholars showed that planetary health is a concern for everyone, yet certain populations experience a higher proportion of negative health impacts due to inequities in exposure,

vulnerability to challenges, and limitations in the capacity to respond, largely in the global South (Nicholas & Breakey, 2017). Nurses were particularly concerned about the disproportionate impact on people rendered vulnerable to climate change such as women and girls, pregnant women, the elderly, children and youth, Indigenous Peoples, northern residents, homeless people, people with disabilities or chronic illness, people in low income situations, people living off the land, and future unborn generations (Allen, 2015; Dillard-Wright et al., 2020; Divakaran et al., 2016; Kalogirou et al., 2020a; Kameg, 2020; Neal-Boylan et al., 2019; Leyva et al., 2017; Lilienfeld et al., 2018; Nicholas & Breakey, 2017; Petrusek MacDonald et al., 2015). Numerous authors showed that by the nature of their work, nurses witness the human cost of climate change and environmental injustice, and by virtue of the role, find themselves on the front lines facing the greatest public health threat of all time (Dillard-Wright et al., 2018, Divakaran et al., 2016; Goodman, 2015).

Direct impacts on human health related to climate change mentioned in the literature included increases in heat exposure, more humidity affecting mould, tree pollen affecting allergies, and wildfires affecting air quality. Extreme heat, drought, flooding, rising sea levels, poor water quality, and vector-borne diseases were further examples (Nicholas & Breakey, 2019; McDermott-Levy et al., 2019; Travers et al., 2019). Moreover, scholars recognized climate change as a harm multiplier by exacerbating health challenges with direct impact on the care needs of vulnerable populations (Divakaran et al., 2016). Poor indoor and outdoor air quality and excessive heat, for example, were recognized to trigger sensitivity in respiratory, cardiovascular, and renal function in people with pre-existing health conditions. Some nurses witnessing these direct impacts on human health described their awareness as a “lightbulb” event (Terry et al.,

2019) or an experience or realization of a sense of urgency toward climate change as a crisis facing humanity (Lilienfeld et al., 2018). Such moments were transformative in how nurses engaged in planetary health within their nursing practice and for the people they served.

### ***Indirect Health Impacts***

In my literature review, I noted how indirect impacts of climate change also amplified human health challenges. Scholars drew attention to various indirect impacts including how people experienced nutritional challenges due to decreased food availability, increased costs, and lower food quality (Kurth, 2017; McDermott-Levy et al., 2019; Nicholas & Breakey, 2019). Health and welfare disparity was already known to be a systemic disadvantage among vulnerable people in terms of ageism, disability, racism, gender, and poverty, however scholars showed that overlapping disparity with the impacts of climate change only amplified people's risks (Amiri & Zhao, 2019). Some nurses have been "driven to act" (Terry & Bowman, 2020, p. 3) out of outrage over the climate impacts on the people they serve.

Nursing scholars wrote about social instability secondary to climate change that risked impacting people's economic stability, security, and mental health (Kameg, 2020; Nicolas & Breakey, 2019). For example, scholars showed that heat waves resulted in decreased labour productivity (Nicolas & Breakey, 2019). Similarly, climate-induced natural disasters threatened global economic supply chains and increased risk for countries already economically vulnerable (Kameg, 2020; Nicolas & Breakey, 2019). Exposure to interpersonal violence was shown to increase with the severity of environmental degradation (Cipriano et al., 2021; Kameg, 2020). Nursing scholars also demonstrated the indirect impact of climate change on mental health. Specifically, they highlighted that climate change impacts on the social determinants of health

will exacerbate experiences of depression, anxiety, trauma-related disorders, domestic violence, and suicide because of increased stress and disrupted livelihoods (Campbell, 2008; Cipriano et al., 2021; Goodwin & Shattell, 2020; Kurth, 2017; Nicholas & Breakey, 2019). Scholars also expressed concern for nurses as frontline health professionals when deteriorating health increases individual care needs (Divakaran et al., 2016; Schwerdtle, 2015). Climate change was shown to impact every aspect of people's lives influencing the social, economic, and physical environments that determine health and wellness among people and populations (World Health Organization, 2017). The inevitable displacement of people and vulnerable populations due to climate change and planetary decline were mentioned as significant risk factors for nurses to consider now and in the future.

### **Nursing Awareness**

While I noticed that many nurses in the literature viewed climate change as a concern, it was less clear how climate change was seen as a professional nursing issue and how it should be addressed (Kalogirou et al., 2020a). Scholars showed that nurses frequently focus on challenging technological, bureaucratic, and time-pressured institutional demands beyond their control (Watson, 2019) and prioritize immediate patient care and safety within health care institutional environments. They pointed to workload demands that made it difficult for nurses to communicate and incorporate their awareness of environmentally responsible practices (Kalogirou et al., 2021). The terms downstream and upstream were used to describe a focus of attention for addressing problems from a perspective of either their upstream causes or their downstream effects. Within the context of nurse awareness of environmental impacts on health, experts recognized both the interconnected upstream and downstream issues as important

(Brigham, 2021). Specifically, nursing scholars described planetary health in the context of nursing interventions as both upstream and downstream in relation to the social determinants of health (Brigham, 2021; Butterfield, 2002; Kalogirou et al., 2020a; Kleffel, 1991a). Nurse awareness of environmental concerns tended to relate to how they understood their professional role, either in an individual patient health context or within a larger social context (Kalogirou et al., 2020a; Valentine-Maher et al., 2018).

### ***Downstream Context***

In the literature, a downstream context referred to approaching nursing practice as meeting the immediate health needs of individuals and bearing witness to their suffering. The metaphor of a river can be used to help illustrate a downstream context where someone is found struggling in the water downstream, but the cause of that struggle occurred upstream (Chinn, 2017; McMahon, 2022). Researchers highlighted that most nursing work happens downstream when nurses respond to people once they were sick. They pointed to health environments with high workloads, staffing shortages, and reduced material support, where nurses rarely have time to consider the interrelatedness of climate change and planetary decline. Engaging in downstream environmental efforts, such as managing waste and focusing on individual behaviours, drew nurses' attention away from the social and environmental issues at the root of many systemic problems (Kalogirou et al., 2020a). Nurses risked getting stuck in immediate health care needs and were unable to participate in upstream solutions such as addressing social and economic inequality (Dillard-Wright, 2020; Kalogirou et al., 2020a). Scholars also showed that nurses are precariously at risk of being overwhelmed by downstream outcomes of disease, illness, and instability in an increasingly unpredictable climate future (Butterfield, 2002; Hanley

& Jakubec, 2019). Additionally, not only do nurses work with people affected by planetary decline challenges such as climate change, they also face significant downstream challenges in their personal lives.

I noticed nurse awareness of environmental responsibility was relevant to practices that focused on optimizing the effective use of materials and energy in health care (Kallio et al., 2020; Kangasniemi et al., 2014). Even though nurses were generally aware of downstream health system challenges such as pollution, waste management, and energy consumption (Amiri and Zhao, 2019), there was a gap in transferring their awareness into practice. In the context of reducing waste, a study by Biederman et al. (2021) found that most nurses used non-sterile gloves inappropriately while administering routine vaccinations and they cited safety and professionalism as explanations for doing so. The perception of safety among nurses using non-sterile gloves for low-risk-for-exposure procedures increased the amount of unnecessary medical waste, which in turn affected public health through environmental pollution (Biederman et al., 2021).

Working downstream of health care's environmental impact, nurses were shown to have an important stakeholder role in enabling environmental responsibility in clinical nursing practice (Kallio et al., 2020). For example, some studies pointed to hospital policies that expected nurses to reduce waste, conserve energy, and use less resources (Campbell, 2008; Kurth, 2017; Lilienfeld et al., 2018; Soares et al., 2016; Travers et al., 2019). Influencing nurse participation in environmentally responsible practices included strategies that were visible to all staff with concrete data on measuring waste produced, policies that designated duties for different professions, and adequate resources for practice and education (Kallio et al., 2020).

Researchers also showed that nurses experienced challenges being environmentally conscious in a downstream context because of systemic barriers such as managing hospital waste in crowded and impractical workspaces, using low quality health care products that created unnecessary waste, and following ineffective recycling procedures that took time to complete (Kallio et al., 2020; Kalogirou et al., 2021). Nurses concerned for planetary health contended with the additional emotional burden of contributing to health care's environmental impact while providing patient care (Kurth, 2017; Terry & Bowman, 2020). Nurses were particularly conflicted working in a downstream context when toxic medical waste was produced during patient care, or when single-use plastics ended up in landfills despite recycling efforts (Muñoz, 2012; Royal College of Nursing, 2018). Many nurses found coming to terms with environmental challenges and trying to act on them overwhelming. In fact, the magnitude of environmental impacts within health care were shown to take an emotional toll (Schenk 2019; Terry & Bowman 2020).

Nurses who experienced climate-related natural disasters often lived and worked in the same region (Hanes, 2016; Stone & Fitzpatrick, 2019). Therefore, they experienced both the personal and professional impacts of climate-related disasters, such as floods and fires, and this raised concern for their health and well-being in an increasingly challenging climate future (Rosa & Upvall, 2019). Researchers showed that as primary contacts, nurses faced the psychological toll of caring for people who are the least prepared to deal with the consequences of climate change (Larsson & Butterfield, 2002).

In the literature, nurse scholars also challenged current health system narratives that placed environmental responsibility on individual nurses to do their part and recommended

looking beyond downstream fixes (Dillard-Wright et al., 2020). As witnesses to those who suffer, nursing scholars described that nurses require the moral agency to influence upstream efforts such as policy advocacy for planetary health (Falk-Rafael & Betker, 2012). There was a certain level of cognitive dissonance for nurses to get engaged in planetary health when the challenges and solutions were always presented in a downstream context. Nursing scholars voiced critical limitations of health systems and structures that emphasized downstream thinking for nursing and recommended raising awareness to influence upstream thinking throughout the profession.

### *Upstream Context*

Researchers showed that an upstream context for nursing awareness of planetary health shifted the emphasis to social and structural antecedents to poor health and gave way to actionable pathways for social justice through nursing (Valentine-Maher et al., 2018). Upstream thinking was described as seeking solutions to address the root of problems, and when applied to planetary health, it empowered a structural understanding of the injustices among those most affected (Valentine-Maher et al., 2018). Nursing scholars described holistic nursing in terms of examining planetary health from a social justice perspective and looking toward health equity solutions (Kalogirou et al., 2020a; Rosa et al., 2019). Dillard-Wright et al. (2020) advanced the argument for nursing to focus on upstream solutions by using community-based anti-racism and relational practice approaches toward planetary health challenges such as climate change. By looking upstream from downstream challenges, nurses were able to contribute to building social and environmental justice advocacy and offer sustained attention to intersectoral policy and governance initiatives (Dillard-Wright et al., 2020; Nicolas & Breakey, 2019; LeClair et al., 2020; Valentine-Maher et al., 2018). Nurses were shown to have increased awareness of



planetary health factors affecting the health of people and populations. Researchers demonstrated that the nursing profession therefore has a pivotal role in upstream mitigation strategies of issues including, but not limited to, climate change (Butterfield et al., 2021).

### **Professional Values Clarification**

I noted discussion about nursing values and perspectives for the profession as nurses showed increasing awareness of the health impacts of climate change and the unprecedented scale of future irreparable challenges. Specifically, nursing values such as caring, fairness, advocacy, and social justice raised nurses' consciousness toward issues such as climate change (Valentine-Maher et al. 2018; Lausten, 2006; Terry et al., 2019).

Watson (2018) described the regenerative life energy of caring through which nurses have always given voice to those who suffer. Planetary health was described as a new era of possibility for nursing to attend to caring from a truly holistic and unitary approach (Lausten, 2006; Rosa, 2015; Sanderson et al., 2020). Researchers pointed to ecologically conscious nurses as social actors of caring who recognized a broader perspective toward planetary health and offered new directions in holistic care (Lausten, 2006). Planetary health consciousness went together with valuing social justice among nurses to inform roles of advocacy and agents of change (Leffers & Butterfield, 2018).

Fairness and advocacy were nursing values that stood out among those concerned about communities rendered vulnerable due to planetary health challenges (Terry et al., 2019). In particular, scholars highlighted resource fairness as a commitment toward global equality among nurses advocating for developing countries to have the right to development (Nicholas & Breakey, 2017). Advocacy on behalf of the underserved has always been a foundational value

within nursing and, in the context of climate justice, was considered significant for integrating climate justice knowledge into practice, education, and health policy (Leffers, et al., 2017; Lilienfeld et al., 2018). Researchers mentioned caring, fairness, and advocacy as nursing values that required skills and a personal commitment to new ways of being a nurse concerned about planetary health (Campbell, 2008).

Like advocacy, social justice was considered a foundational value for nurses to understand climate justice (Neal-Boylan et al., 2019; Nicholas & Breakey, 2017; Sanderson et al., 2020; Terry et al., 2019). By emphasizing the ethical and human rights implications for global health and wellness, climate justice in the literature related specifically to the disproportionate burden of climate change health consequences on populations in the global South who have contributed the least to human production of GHG emissions (Campbell, 2008; Lilienfeld et al., 2018; Nicolas & Breakey, 2017; Rosa et al., 2019). This increased exposure to environmental challenges that continues to disproportionately affect poor, vulnerable, and marginalized communities in the global South was cited as a further impediment to development for many countries in the region (Amiri & Zhao, 2019; Campbell, 2008; Dillard-Wright et al., 2020; Divakaran et al., 2016).

As has been mentioned, I noticed nursing values of caring, fairness, and advocacy were particularly important for mobilizing nurses to increase their awareness and action for planetary health. Scholars described climate change and the intersection of climate justice as a moment of value clarification for the nursing profession. By relating nursing to caring for future generations and committing to addressing global inequality, scholars showed that nurses are well positioned within a new paradigm that could attend more deeply to environmental principles. Scholars also

referred to the power of nurses as trusted members of society to influence planetary health initiatives through their professional voice (Goodwin & Shattell, 2020; Valentine-Maher et al., 2018).

### **Reconceptualizing Nursing's Foundation**

Some nursing scholars have written about climate change in ways that inform nursing of its history and founding principles that link a person's health to their environment. Within that approach, they called on nurses to examine the interconnected nature of global challenges by examining root causes and historical narratives (Sanderson et al., 2020). Indeed, the legacy of nursing's historical roots in community public health was a significant source of inspiration within the nursing literature (Beck & Dossey, 2019; Ogbolu et al., 2019).

The work of Florence Nightingale (1820–1910), who promoted fresh air, pure water, sanitation, light, and efficient drainage to improve health and wellness, has long been considered an original form of environmental health advocacy (Beck & Dossey, 2019; Wagner & Whaite, 2010). By examining the historical roots of nursing as an environmental philosophy, scholars demonstrated the relevancy of nursing to pivot toward current planetary health challenges (Beck & Dossey, 2019; Dillard-Wright et al. 2020; Kalogirou et al., 2020b). Nightingale's writings reflected a deep connection between health and the environment that can be applied to current environmental challenges (Wagner & Whaite, 2010). She wrote “plants die, animals die and men die. But it is not all from want of food. Tree planting would do much both to bring rainfall and to arrest floods” (Nightingale, 1879, as cited in Beck & Dossey, 2019, p. 259). Nursing's leadership in environmental health advocacy originated in Nightingale's “progressive and subversive work”

(Butterfield et al., 2021, p. 1) and offered insight into how the nursing profession could reconceptualize this legacy toward environmental action among nurses.

Moreover, researchers underlined that understanding the historical context in which nursing as a profession and a discipline developed was important to understanding how nursing is conceptualized today (Kalogirou et al., 2020b). Modern nursing as a specific form of nursing founded by Florence Nightingale (Beck & Dossey, 2019; Rosa et al., 2019) became organized at a time when allopathy and homeopathy were competing for dominance in medical care (Light, 1997). While Nightingale's writings reflected a holistic philosophy of environmental health interconnected with human health, nursing associated primarily with allopathic medicine and developed as a discipline within the Western scientific method (Light, 1997; Tulyakul & Meepring, 2021).

Given this historical context for modern nursing, the literature provided examples of nurse scholars taking issue with the value placed on Western science as the sole approach to addressing planetary health and referred to the potential of sharing traditional ecological knowledge from Indigenous perspectives (Sanderson et al., 2020). Some researchers described modern nursing as dismissive of its ancient roots and other traditional ways grounded in Indigenous ways of knowing (Kalogirou et al., 2020b; Sanderson et al., 2020). Moreover, the work of reconciliation for the cultural assimilation and marginalization of Indigenous ways of being, knowing, and doing could offer alternative solutions to adapting and mitigating climate change (Sanderson et al., 2020).

In the literature, reconceptualizing nursing knowledge was further necessitated by an awareness of colonization as a material and present reality in nursing practice and health systems

(Dillard-Wright et al., 2020). In this light, some saw modern nursing as an expression of colonial violence and racism toward Indigenous Peoples and their world views (Dillard-Wright et al., 2020; Stake-Doucet, 2020). Scholars pointed to the fact that modern nurses have often been alienated from historical narratives of healing practices resulting in a loss of knowledge and practice that was more nature centred (Dillard-Wright et al., 2020; Kleffel, 1991a). The association of women and nature, for example, was undermined by the Scientific Revolution and the erasure or distortion of ancient traditions by women healers and midwives was mentioned as part of the historical legacy of modern nursing (Dillard-Wright et al., 2020; Kleffel, 1991a). Within these complex perspectives of modern nursing, scholars examined the profession's legacy to reconsider the personal and professional positionality of nurses in the context of social, political, cultural, and economic conditions that could inform an environmental justice lens toward ecologically sustainable approaches for modern nursing (Dillard-Wright et al., 2020; LeClair et al., 2020; Leffers et al., 2017).

### **Nursing's Paradigm of Environment**

Within the widely accepted notion of nursing's metaparadigm, scholars directed nursing knowledge development through a lens of four interconnected domain concepts: person, health, nurse, and environment (Kalogirou et al., 2020b; Thorne et al., 2002). However, they underlined that nursing knowledge of the environment as a metaparadigm domain concept was not made explicit, defined for nursing practice, or expressed as a professional mandate during its development (Bender & Feldman, 2015; Kalogirou et al., 2020b; Kleffel, 1991b; Lausten, 2006). Within nursing's metaparadigm, researchers pointed to a tendency to represent either a local paradigm orientation (environment as immediate surroundings), or a unified paradigm

orientation (environment as metaphysical or all encompassing) (Kalogirou et al., 2020b; Lausten, 2006; Thorne et al., 2002). Both these paradigm orientations toward environment (local or unified) attended to human health at an individual level rather than human health and its interrelationship among ecosystems for planetary health (Kalogirou et al., 2020b; Lausten, 2006; Thorne et al., 2002).

The implications of nursing's innocuous environmental paradigm have contributed to a delayed climate response and to the vague understanding nurses have of their professional responsibility toward environmental challenges (Kalogirou et al., 2019; Kalogirou et al., 2020a). Researchers showed that nurses who lacked a professional consciousness of the environment tended to assume a peripheral role in social, economic, and political affairs related to planetary health (Kleffel, 1996). Indeed, some researchers pointed to a gap between environmentally responsible nursing and how nurses perceived their professional responsibilities. This gap was highlighted as a weakness that affected nurses' awareness, knowledge, and action on planetary health challenges (Kalogirou et al., 2021; Kangasniemi et al., 2014).

Broadening the environmental paradigm of nursing was a topic of focus in the nursing literature. Researchers voiced support for nurses to conceptualize planetary health as integral to human health and to engage in planetary health issues as part of their professional role. Nursing scholars described the multi-level effects of ecosystem strain to help inform an imperative for nurses to participate in planetary health leadership to foster resiliency in health systems (Rosa & Upvall, 2019). A broader conceptualization of environment in nursing practice supported the congruence of nurses' perception of climate change, the environment, and their role in addressing sustainable health care practices (Kalogirou et al., 2020a; Travers et al., 2019).

Nurse scholars have long advocated for an ecological environmental paradigm in nursing that draws from ecology and nature and recognizes the interconnectedness of environment and health, the broader implications for the health of other species, and general planetary health within practice decisions (Kleffel, 1991a, 1991b, 1996; Lausten, 2006). Researchers pointed to the value of framing an ecological environmental paradigm in nursing theory and practice in order to establish planetary health as part of the epistemological foundations of nursing knowledge to empower nurses to confront the challenges (Bender & Feldman, 2015; Goodman, 2015). For decades, nursing scholars have expressed concern about nursing's professional knowledge development regarding the metaparadigm of environment that is devoid of an ecological underpinning. Nurses are challenged to translate planetary health and ecological beliefs into their professional activities in part because nursing education has not focused on presenting the environment as interconnected ecological processes to nursing students (Lausten, 2006). Individualistic and narrow notions of environment have also contributed to a historical research gap, which Bender and Feldman (2015) contended has limited a broader ecological consciousness in nursing knowledge development. These authors along with others articulated a link between nursing practice and environment within nursing's metaparadigm to encourage scholarship in the fundamental and inseparable relationship nurses have to the environment (Fawcett, 2022; Kalogirou et al., 2020b; LeClair, 2021; Potter, 2022).

I noticed how nursing scholars explored the very basis of nursing knowledge to inform the role of nurses in connecting human health to planetary health (Brigham, 2021; Potter, 2021). Authors discussed the epistemological foundations of nursing knowledge and the potential for a nursing ontology (ways of knowing) that encompasses ecological principles to empower nurse

awareness and subsequent engagement in planetary health challenges (Kalogirou et al. 2020b; Lausten, 2006). In particular, they referred to planetary health as a new era of possibility for nursing to view and enact caring from a holistic perspective and provide meaningful local-to-global responses for social and environmental justice (Rosa, 2017; Sanderson et al., 2020). Researchers demonstrated that orientating nursing toward planetary health represents a paradigm shift that connects the social determinants of health and envisions the interrelated health of humans, more-than-humans, and the environment (Divakaran et al., 2016; Rosa et al., 2019; Rosa & Upvall, 2019).

Finally, within nursing's paradigm of environment, it is worth examining several terms that researchers used throughout the literature. The term more-than-human, for example, was used to describe the interconnectedness of humans to non-human entities, such as animals, plants, and inanimate objects, within a holistic and ecological perspective of nature (Abram, 1997; Latimer & López Gómez, 2019). Similarly, the term one health referred to a holistic and collaborative approach to understanding and addressing shared health threats that involved the interdependence of health of humans, animals, plants, and the wider environment (Hristovski et al., 2010; World Health Organization, 2022). Ecohealth was another term used to extend consideration for ecosystem changes and animal pathology issues in relation to human health (Morand et al., 2020). Finally, the term planetary health was defined as an inclusive approach with a focus on the social determinants of health. It also focused on solutions that included redefining prosperity to enhance quality of life and improve health care delivery for everyone (Whitmee et al., 2015). Integrative approaches such as one health, ecohealth, and planetary health, represented interdisciplinary collaboration within the health and science disciplines.



These approaches supported an important step of analyzing and understanding nursing's paradigm of the environment in broader terms, inclusive of human, more-than-human, and ecological health.

### **Nursing Action**

Nurses form the largest group of health care professionals worldwide (Kallio et al., 2020) and, as such, they are well positioned to support local, regional, and national adaptation and mitigation efforts toward climate change (Kurth, 2017; Leffers et al., 2017; Neal-Boylan et al., 2019). Various scholars emphasized different aspects of nursing and the potential for planetary health action while considering the multi-faceted challenges of mobilizing action throughout the nursing profession. For example, they pointed to nurses as role models who could have a significant impact by demonstrating what caring about planetary health looks like from a nursing perspective (Goodwin & Shattell, 2020). Nurses were identified for their key role in recognizing, intervening, educating, and advocating for the health of people, communities, and populations impacted by climate change (Neal-Boylan et al., 2019). Within these roles, scholars noted the importance of localized knowledge that nurses bring to people in their community and how they can respond to patients' concerns about their local environment (Larsson & Butterfield, 2002; Rosa & Upvall, 2019).

In addition to local knowledge, nurses were also shown to possess power to inspire action on planetary health in all levels of health care organizations and institutions. Researchers showed how they can encourage and energize colleagues through nursing leadership to change workplace culture (Divakaran et al., 2016). Working with like-minded people, they contributed to shifting organizational culture to address planetary health concerns (Divakaran et al., 2016; Essex et al.

2023). Other examples of nurse action documented in the literature included educating students and practising nurses in the workplace on interdisciplinary collaboration skills, nature-based health and wellness practices, and sustainable health care initiatives (Divakaran et al., 2016; Hansen-Ketchum et al., 2009; Howes & Warwick, 2023; Potter, 2019; Roden & Lewis, 2021).

Scholars pointed to the unprecedented opportunities to grow planetary health awareness and action through public health nursing (Lilienfeld et al., 2018; Goodman, 2015). Many nurses in public health realized the importance of comprehensive, cohesive, and coordinated action associated with threat-amplifying effects such as the intersection of climate change and COVID-19 (Zang et al., 2021). In the literature scholars clearly demonstrated the potential for nursing action through collaboration, leadership, education, and research.

### ***Collaboration***

Scholars recognized nurses collaborating with others as an essential component of effective action since goals such as sustainable development in health care and influencing green initiatives within workplace culture required buy-in from nursing and interprofessional teams (Divakaran et al., 2016). Environmentally responsible nurses shared their clinical practice insights to influence the effective use of materials and energy (Kallio et al., 2020). Many nurses found their voice in collaboration with other health professionals. They were valued for their credibility as frontline care providers because they could speak to the lived experience of enacting environmentally responsible practices in health care (Kallio et al., 2020; Rosa et al., 2019).

Researchers found that the nursing profession can give voice for the common good in society and collaborate with others to critically assess the influence of planetary decline

(Valentine-Maher et al., 2018). Developing interprofessional partnerships was described as foundational to integrating environmental health into mainstream nursing practice (Larsson & Butterfield, 2002). Examples of interprofessional partnerships included participating in planetary health-related committees, health-related environmental interest groups, collaborative research projects, joint policy statements, and health care delivery models that incorporated planetary health education (Butterfield, et al. 2021; Divakaran et al., 2016; Kurth, 2017). Another example in the literature was the concept of green teams, which scholars described as a multidisciplinary group of employees within hospitals that promoted environmentally sustainable institutional practices. Green teams provided space for nurses to play an active leadership role in promoting healthy environments and collaborating and networking with like-minded people (Kurth, 2017; Lilienfeld et al., 2018; Mejia & Sattler, 2009).

### ***Leadership***

Leadership factors featured prominently in the literature in two ways. Firstly, through the discussion of leadership skills to affect change, and secondly, through a growing number of nurse leaders writing about planetary health and nursing's imperative to be involved. Nurse leaders in planetary health recognized the centrality of the environment in the nursing discipline (Valentine-Maher et al., 2018). Embracing the environmental factors that influence health was found in the work of Florence Nightingale, who scholars championed as a particularly relevant historical example of leadership in environmental awareness and social action (Nicholas & Breakey, 2017; Rosa, 2017; Rosa et al., 2019). Nightingale's leadership in embracing environmental factors such as access to clean air and water, and acting on environmental threats such as deforestation, was well articulated in the literature (Dossey et al., 2019; Nicholas & Breakey, 2017; Terry &

Bowman, 2020). I found that researchers recognized nursing leadership as vital to addressing climate change among those who understood the impact of environment on health and were compelled to act (Soares et al., 2016; Valentine-Maher et al., 2018).

Many nurse scholars identified the need for environmental leadership and gave examples of how nurses have used their unique skill set to influence health systems and local communities. They cited nurses as leaders in reducing, reusing, and recycling waste, which had positive impacts on the environment and contributed financially by diverting waste streams (Soares et al., 2016; Terry et al., 2019). Nurses highlighted the importance of reducing GHG emissions through climate-friendly methods of waste reduction (Campbell, 2008; Lilienfeld et al., 2018; Terry et al., 2019; Terry & Bowman, 2020). Additionally, nurse leaders concerned about resource conservation to reduce waste within health care referred to the impacts of medical waste pollution on health outcomes (Rosa et al., 2019). Nurses also improved energy efficiencies within hospital food services by reducing meat consumption, advocating for locally sourced food, and rejecting the purchase of bottled water (Kurth, 2017; Lilienfeld et al., 2018; Travers et al., 2019). They contributed to emergency preparedness action plans within care facilities and through community initiatives and advocated for vulnerable populations to be represented in disaster planning (Kalogirou, 2020a; Lilienfeld et al., 2018).

Scholars described ecologically minded nurses who developed skills essential for adapting to environmentally sustainable practices. Nurses led by example in their communities and as mentors among colleagues. They did this by modelling lifestyle choices in efficient public transportation, walking, and riding bicycles to reduce their carbon footprint and mitigate climate change (Leffers & Butterfield, 2018; Muñoz, 2012; Travers et al. 2019). Scholars pointed to

nurses with strong communication skills who excelled in debunking climate change disinformation campaigns in discussion with listeners (Kurth, 2017; Terry et al., 2019). They showed that nurses with environmental health literacy were more likely to champion planetary health and mentor new nurses who might then be inclined to support environmental health issues (Terry et al., 2019; Valentine-Maher et al., 2018).

I read how nurses found their voice in leadership roles within health care teams as advocates for planetary health. Researchers pointed to environmental advocacy by nurses that involved overcoming authoritative boundaries within workplace hierarchies by “leapfrogging” (Butterfield et al. 2021, p. 3) nurses into leadership roles throughout health care. Butterfield et al (2021) referred to leapfrogging as a way to accelerate change by increasing the number of nurses in sustainable health care roles and incentivizing climate change work. Scholars pointed to other ways nurse leaders could support system change including raising the profile of activism to speak truth to power and supporting a global lens that placed values of equity, justice, and morality within goals for sustainable development (Butterfield et al. 2021). Kallio et al. (2020) also examined the role of nurse managers and the tools they needed to promote and enable environmental responsibility in nursing practice. They described nurse managers and administrators as having a crucial leadership role using administrative tools to promote planetary health. They cited examples that included encouraging staff, training, providing material resources and guidance for better working environments, developing competencies, and engaging nurses in environmentally responsible practices. Once a system to support planetary health initiatives was in place, institutions were able to lead to further change by including

planetary health concepts in performance evaluations, contract negotiations, and collective bargaining.

Scholars also mentioned senior administrative nurse leaders who influenced planetary health within health care organizations. Initiatives included championing environmental practices to influence workplace culture, controlling budgets to prioritize environmentally friendly products and promote green production patterns among manufacturers, providing decision-making authority to remove disposable supplies and reduce hospital consumption, and networking among hospital wards or other health care facilities to design and implement green innovations (Divakaran et al., 2016; Kallio et al., 2020; Rosa et al., 2019; Terry et al., 2019). Researchers showed that leadership within health care organizations can create opportunities for discussion and reflection on the environmental crisis among health care workers to generate awareness and action (Soares et al., 2016).

In contrast to the positive examples provided, nurses often described leadership in planetary health advocacy as a challenging experience since colleagues often saw them as going against normal nursing practice behaviours (Terry et al., 2019; Terry & Bowman, 2020). A study by Terry et al. (2019) provided examples of environmentally engaged nurses going against dominant nursing practices and facing workplace incivility when colleagues assigned labels such as “eco-nut, tree-hugger, and garbage scrounger” (p. 730). This study also raised concern about developing and supporting environmentally engaged nurses if they experience avoidance behaviours by colleagues that could impact their self-worth and integrity. Some nurses have been known to suppress their response to witnessing non-eco-friendly workplace practices such as poor waste management (Terry and Bowman, 2020). Nurses who tried to lead environmental

engagement in their practice sometimes faced additional challenges when disassociating from dominant health care practices. The response or lack of response from others also contributed to burnout (Terry et al., 2019).

Scholars highlighted that leadership skills taught early in undergraduate education including teamwork, effective communication, and action-oriented approaches, were important for nursing leadership in planetary health (Divakaran et al., 2016; Rosa et al., 2019; Terry et al., 2019). They also showed that engagement in planetary health education at the undergraduate level can awaken nurses at an early stage in their professional development (Terry et al., 2019). In fact, planetary health leadership often began with the education of nurses, students, patients, and communities (Kurth, 2017).

### ***Education***

Many scholars identified a lack of knowledge and appropriate education and training for nurses about planetary health issues (Anåker & Elf, 2014; Bell, 2016; Dillard-Wright et al., 2020; Hanley & Jakubec, 2019; Lopez-Medina et al., 2019). They questioned how education was preparing nurses to deal with increasing health-related environmental challenges (Bell, 2016; Schenk, 2019). Nurse scholars described a growing imperative for planetary health curriculum in nursing education and called for the integration of planetary curriculum throughout nursing education from the baccalaureate to the doctoral level. Nurturing interdisciplinary health education that incorporated environmental issues and sustainable health was just one example cited for how nursing education needs to change. Researchers showed how nursing students can be catalysts for change when they are encouraged to advocate for sustainable infrastructure on campuses, such as implementing organics recycling (Lausten, 2006; Neal-Boylan et al., 2019;

Terry et al., 2019; Yang et al., 2019). Fawcett (2019) also acknowledged students leading a climate strike in protest of government inaction and calling on nursing students to support demonstrations as a catalyst of action. I noticed how integrating planetary health into nursing education was essential to developing capacity within the nursing profession to meet the growing challenges of planetary health now and in the future (Larsson & Butterfield, 2002; Leffers et al., 2017; Lilienfeld et al., 2019; McDermott-Levy et al., 2019; Neil-Boylan et al., 2019; Terry et al., 2019).

Scholars examined concepts of sustainability, planetary health, climate change, and environmental advocacy for the development of nursing curriculum within academic programs, the healthcare sector, and future nursing research (Anåker & Elf, 2014). To that end, the literature pointed to innovative planetary health models developed in Canada, the United States, and the United Kingdom that are applicable to nursing education (Canadian Association of Nurses for the Environment, n.d.a; Neal-Boylan, et al., 2019; Zuzelo, 2016.). For example, researchers highlighted the Ecological Planetary Health Model as a resource for integrating relevant climate change recommendations into nursing education (Leffers et al., 2017; McDermott-Levy et al., 2019). Similarly, the Integrative Model for Environmental Health Research examined climate change and associated factors, and the Conceptual Framework for Climate Health and Wellbeing included consideration for the human causes of climate change (McDermott-Levy et al., 2019). Larsson and Butterfield (2002) developed a comprehensive five-tiered conceptual model for integrating national nursing competencies related to planetary health into practice. Like this model, the Research, Education, Advocacy, and Practice framework shifted health focus from humans to a broader planetary health paradigm (Rosa, 2017; Travers et al., 2019). Researchers



highlighted this framework for its ability to educate future nurse leaders in reframing health to include a human-environment, human-planet, human-climate mandate (Rosa, 2017). These innovative planetary health models and frameworks mentioned in the literature are widely applicable to health care policy development and nursing education at all levels including continuing education of practising nurses. Applying such models can increase awareness and knowledge of planetary health, and support skill and competency development that emphasize the interprofessional nature of addressing planetary health issues.

The recommendation for nursing education to incorporate planetary health into curriculum and teaching and learning strategies was a consistent refrain throughout the nursing literature. The Alliance of Nurses for Healthy Environments (ANHE) published a detailed and informative resource for nursing education entitled *Environmental Health in Nursing* (ANHE, n.d.). Now as a second-edition electronic textbook available from ANHE as open-source material through Creative Commons licensing, I found it is well suited for adapting nursing curriculum to connect nursing practice and environmental health. Each chapter highlighted important background information, outlined nursing responsibilities, and provided direct web-based links to organizations and community resources. Chapters included environmental health science, practice settings, sustainable communities, climate change, advocacy, and theory and research.

### ***Research***

As was mentioned earlier, nursing research into environmental health dates to the writings of Florence Nightingale (Beck & Dossey, 2019; Butterfield et al., 2021). However, nursing research over the past 30 years has focused primarily on disaster preparedness, occupational health, and the home environment (Polivka & Chaudry, 2017; Pope et al., 1995).

More recently, there has been a significant push for nurse researchers to focus efforts on reducing GHGs and advancing policies to mitigate climate change (Hanes, 2016; Polivka & Chaudry, 2017; Rosa & Upvall, 2019). While nursing researchers aim to develop a body of knowledge within the profession, discussion has focused primarily on two distinct areas: the relationship of nursing to the environment and nursing research on environmental health impacts. Preparing nurses to engage in planetary health research has included basic knowledge and concepts of environmental science and climate science awareness to be taught within nursing education (Larsson & Butterfield, 2002; McDermott-Levy et al., 2019).

This historical research gap in the relationship of nurses and the environment, which has also raised questions about how prepared nurses are to responding to climate change, was frequently cited in nursing literature (Larsson & Butterfield, 2002; Kalogirou et al., 2020b; Kleffel, 1991a). Sullivan-Marx and McCauley (2017) pointed to a lack of dedicated research funding for nurses to focus on climate change and global health. With effective resource commitments to research funding and opportunities for curriculum development, scholars considered nurses to be well positioned for research into environmental health impacts and the mitigation and adaptation to climate change (ANHE, n.d.; McDermott-Levy et al., 2022; Polivka et al., 2012; Sullivan-Marx & McCauley, 2017). They suggested that when nurses became invested in climate action, engaging them in nursing research was an effective way to focus their efforts (Travers et al., 2019). In addition to being involved in research, nurses also advocated for governments to conduct environmental research to support regulatory implementation for environmental concerns such as air quality protection (Valentine-Maher et al., 2018).

I found much discussion by nurse educators and researchers around the urgency for a radical imagination to lead change. Radical in this context means to grasp at the root of problems (J. Dillard-Wright, personal communication, May 6, 2022). A radical imagination for nursing documented in the literature included deconstructing nursing philosophy, theory, practice, research, and policy to take down boundaries and reconnect new ways to each other and the environment (Dillard-Wright et al., 2020). For example, nursing research that called for a paradigm shift in our relationship to the planet presented a leadership opportunity for Indigenous health nursing. (Sanderson et al., 2020). Researchers sought ways to unpack the many historical identities of nursing and bring awareness of nurses' positionality within healthcare's anthropocentric industrial complex (Dillard-Wright et al., 2020; LeClair, 2021; LeClair et al., 2021).

Many nursing scholars worked to fill gaps in planetary health research. For example, researchers focused on the perception of climate change and environmental responsibility among nurses (Kallio et al., 2020; Terry et al., 2019) and the role of nurses in mitigating climate change in a hospital context (Kalogirou et al., 2021) and within regulatory bodies (Mundie & Donelle, 2022). Nurse researchers also examined the role of nurses in supporting justice for communities facing environmental health challenges (Amiri & Zhao, 2018; LeClair et al., 2021) and the importance of physical connections with nature (Drake et al., 2021; Hansen-Ketchum et al., 2009). Midwifery researchers were also involved in moving global goals for sustainable development forward (Rosa & Upvall, 2019).

Nurse researchers have long been engaged in environmental health research, yet a historical research gap in the relationship between nurses and the environment has contributed to

a lack of ecological knowledge among nurses and their role in relation to environmental health. There has been a push in recent years for nurse researchers to focus efforts on planetary health by reducing GHGs and advancing policies to mitigate climate change. I found nursing researchers to be creative thinkers working to take down boundaries between nursing philosophy, theory, practice, and policy, while advocating for a paradigm shift in our relationship to each other and the planet. Finally, within a growing field of research, nursing scholars highlighted the importance of nurses who understood the interdependence of humanity and planetary health and supported individuals and communities affected by planetary health challenges.

### **Organizations and Policies**

Nursing organizations are demonstrating a critical role in the development of policy and advocacy surrounding the health consequences of planetary health. There are numerous nursing organizations, from community-based groups to international consortia, engaging in critical dialogue on planetary health issues (Nicholas & Breakey, 2017). For this literature review, I divided organization and policies into regional and national associations, environmental nursing advocacy groups, interdisciplinary alliances, international organizations, and intergovernmental initiatives. This review of organizations and policies is focused on a North American context.

#### ***Regional and National Associations***

In the literature scholars included calls for climate action throughout regional and national nursing associations in Canada and the United States. One such organization, the Canadian Nursing Association, released a comprehensive report in 2008 entitled *The Role of Nurses in Addressing Climate Change*, an updated position statement on climate change in 2017, and a new policy brief on health and climate change in Canada in 2022. Additionally, the

Canadian Nurses Association's stated position concerning fair distribution of resources and responsibilities globally included the importance of equal opportunity and inclusion of Indigenous Peoples (Sanderson et al., 2020). The association demonstrated early leadership within nursing associations by modelling a framework of social justice toward global health impacts (Nicholas & Breakey, 2017).

Canadian nursing unions, provincial associations, and special interest groups have adopted resolutions and engaged in advocacy efforts that call for climate change mitigation by governments and for collective action within the nursing profession (Association of Nurses and Nurse Practitioners of BC, 2019; Kalogirou, et al, 2019; Martin & Vold, 2019; Nicholas & Breakey, 2017; Ordre des infirmières et infirmiers du Québec, 2019; Registered Nurses Association of Ontario, 2015). Key advocacy recommendations on climate change mitigation included green workplaces, climate change science education, fossil fuel emission reduction, emergency preparedness, the promotion of active transportation, and local healthy agriculture and food systems.

The American Nurses Association adopted disciplinary scope and standards competencies in 2015 that included climate change as part of a nurse's professional role (Kameg, 2020). The association's position statement acknowledged global climate change as unprecedented in human history and asked nurses to speak out in a unified voice (American Nurses Association, 2008; Lilienfeld et al., 2018). Key environmental advocacy initiatives included principles of environmental health, climate change, the use of antimicrobials in agriculture, healthy food, healthy energy choices, and a reduction in single-use devices in health care.

In describing mobilization on a local-to-global continuum, the American Holistic Nurses Association advocated for nursing frameworks to align with the United Nations' (UN) sustainable development goals (Rosa et al., 2019).

### ***Environmental Nursing Advocacy Groups***

Canadian and American nurses have been engaging with planetary health issues through advocacy organizations. The Canadian Association of Nurses for the Environment (CANE), for example, is a national group of nurses who are passionate about improving planetary health (CANE, n.d.b). CANE members are involved in advocacy, education initiatives, and awareness campaigns in collaboration with other organizations such as the ANHE in the United States and the Canadian Association of Physicians for the Environment. The Ontario Nurses for the Environment Interest Group (ONEIG) is an interest group of the Registered Nurses Association of Ontario that aims to promote healthy, sustainable environments through nursing leadership (ONEIG, n.d.). Focal issues of ONEIG include water protection, climate action, and environmental justice. ONEIG's executive members provide regular online skill sharing events such as clothing repair and gardening with food scraps. ONEIG leaders exemplify nature connectedness within an online nursing community on a provincial scale.

ANHE is a national coalition of nursing organizations and individual nurses in the United States dedicated to promoting healthy people and healthy environments. They host a variety of working groups that focus resources for education, research, practice, and policy advocacy. Focal issues of the ANHE include climate change, safer chemicals, water and food sustainability, and energy and health (ANHE, n.d.). The previously mentioned ANHE publication *Environmental Health in Nursing* provided accessible information for practising nurses and policy development

in nursing (Kurth, 2017; Nicholas & Breakey, 2019). The 2016 ANHE report *Climate Change, Health, and Nursing: A Call to Action*, highlighted the critical role of nurses engaged as leaders in climate action (ANHE, n.d.). The ANHE was recognized in the literature as a leader of U.S. campaign development including the Nurses Climate Challenge that aims to mobilize nurses to educate 50,000 health professionals on the impacts of climate change (McDermott-Levy et al., 2019; Kurth, 2017). Scholars highlighted Nurses Drawdown as an innovative project with reports promoted by the ANHE to build a movement among nurses committing to personal and professional action on energy consumption, gender equity, food, mobility, and nature protection (ANHE, n.d.; Huffling, 2021). In association with this large movement, the ANHE developed a Health Equity and Anti-Racism Leadership Institute that aims to advance anti-racism and health equity action in the leadership of environmental health. The program design was guided by the needs and contexts of participating nurses and nursing students (ANHE, n.d.). The ANHE also hosts continuing education webinar events and monthly forum meetings by the Advocacy Committee and Climate Change Committee. Neal-Boylan et al. (2019) highlighted the ANHE as an important organization collaborating with nurse educators, the American Public Health Association, and the Nursing Collaborative on Climate Change and Health, to bring together organizational leaders on national initiatives. Past key aspects of advocacy within the ANHE included education on how to advocate within coalitions to enact change, approaches to addressing government legislation, and civil disobedience education among nursing students (ANHE, 2020). They also launched advocacy campaigns for clean and safe water, food sustainability, and educational initiatives on the health impacts of pollution through chemicals and in the mining and development of fossil fuel energy.

### *Interdisciplinary Alliances*

Interdisciplinary alliances support planetary health action by valuing the perspectives of different health and non-health disciplines in order to collaborate on ideas and develop solutions. An emerging interdisciplinary field of planetary health is taking a systems approach for the complexity of related issues (Potter, 2019). A systems approach involves looking at the health of people, more-than-humans, and the environment in the context of the planet as a whole, and considering the impacts of global change (Florell, 2020; Potter, 2019). Interdisciplinary alliances for the environment are growing among Canadian and American health care professionals, with nurses in key leadership positions. The nurse-led Center for Climate Change, Climate Justice, and Health, for example, is a graduate program within the Massachusetts General Hospital Institute of Health Professions that focuses on climate change impacts and planetary health (Center for Climate Change, Climate Justice, and Health, n.d.). It developed from the overwhelming evidence of climate change and the need to expand nursing and interprofessional health knowledge and action by empowering health care professionals to support the global population in addressing the health impacts of climate change. (Nicholas et al., 2019).

A notable Canadian interdisciplinary alliance is the partnership between CANE, the Canadian Association of Physicians for the Environment, the Canadian Medical Association, the Canadian Public Health Association, and the Urban Health Network. In advance of the 2019 Canadian federal election, this alliance advocated for the climate crisis to be recognized as a public health emergency. The alliance prepared a position statement entitled *Call to Action on Climate Change and Health* (Canadian Association of Physicians for the Environment, 2019). It included a call on governments to form an action plan, develop and fund just transition policies



and programs, and commit to minimizing the impact of climate change on the health of Canadians.

Similarly, scholars highlighted the Rockefeller Foundation and the Lancet as organizations that educate health professionals through collaborations such as the Rockefeller Foundation-Lancet Commission on Planetary Health and the Lancet Countdown on health and climate change (Nicholas & Breakey, 2019; Rosa et al., 2019; Rosa & Upvall, 2019; Travers et al., 2019).

The Mary Robinson Foundation – Climate Justice was mentioned for its dedication to developing and informing a conceptual framework of understanding climate justice and nurses' professional responsibility (Mary Robinson Foundation – Climate Justice, n.d.; Nicholas & Breakey, 2017). Additionally, the foundation focuses on human rights and women's leadership on gender and climate change (Mary Robinson Foundation – Climate Justice, n.d.). Also, within the context of climate justice, researchers pointed to grassroots community models such as the Village-to-Village Network that examined climate change within vulnerable populations including older adults whose health risks can increase as a result of changes to seasonal weather patterns (McDermott-Levy et al., 2019).

Health Professionals for a Healthy Climate and Health Care Without Harm are two interprofessional advocacy groups in the literature that work in coalition with other organizations to offer practice guidance and workplace cultural change strategies among health care providers (Divakaran et al., 2016; Kurth, 2017).

Within the literature, many nurse scholars described the work of individual nurses, nurse advocacy groups, and interdisciplinary organizations. These scholars illuminated the myriad of

ways that nurses are actively engaging in community-building discussions, networking with like-minded individuals, and participating in environmentally significant health advocacy efforts.

### ***International Nursing Organizations***

International nursing organizations such as the International Council of Nurses (ICN) were documented in the literature for seeking to increase nurse advocacy and leadership in climate change policy (Ogbolu, 2019; ICN, 2018b). In 2008 and updated in 2018, ICN published a position statement entitled *Nurses, Climate and Health*. The updated position statement set out key recommendations to governments, nursing associations, and nurses urging immediate action on climate change and making visible the role of nurses in an international planetary health context (ICN, 2018). Scholars pointed to the climate action by national and international nursing organizations that aimed to integrate, adapt, and build resiliency strategies into nursing practice with the goal of climate change mitigation (Leffers et al., 2017).

Researchers documented nurses working within international religious and secular organizations to support human and planetary health. Nurses in the Roman Catholic Church, for example, have been acting on the *Encyclical on Climate Change and Inequality*, a book published by Pope Francis in 2015 (Nicholas & Breakey, 2017). Organizations in conflict zones such as Doctors Without Borders and Partners in Health, have provided a context for nurses to experience the intersection of climate change, health, conflict, and migration (Ayeb-Karlsson et al., 2018; Nicholas & Breakey, 2017). The Indigenous Environmental Network has advocated for the inclusion of Indigenous perspectives within global climate change conversations. Their efforts were highlighted at the 2015 Paris Climate Accord at the 21<sup>st</sup> Conference of the Parties (Sanderson et al., 2020).

### ***Intergovernmental Initiatives***

Nursing scholars writing about climate change advanced the issue as a transnational concern among governments and highlighted the importance of the nursing profession in responding to a global agenda for sustainable development. The 2030 Sustainable Development Agenda put forward by the UN was highlighted as a substantive initiative for developing the role of planetary nursing (Rosa, 2017; Rosa and Upvall, 2019). The agenda identified 17 sustainable development goals linked broadly to health and planetary health (UN, n.d.b). Dossey et al. (2019), in their work with the Nightingale Initiative for Global Health, acknowledged the importance of the sustainable development goals for nurses by recognizing poverty and inequality, for example, as multidimensional factors that are inextricably linked to climate change. In referring to how the sustainable development goals couple poverty reduction priorities with environmental protection, Kurth (2017) pointed to the UN focus on health as a human right. Health and well-being, understood as socially determined concepts, are viewed together as a human right and the driving influence for the entire sustainable development goals framework. Some scholars also acknowledged the overarching theme within the sustainable development goals, emphasizing the interrelationship of social and environmental health (Lilienfeld et al., 2018; Morton et al., 2019; Nicholas and Breakey, 2017; Rosa et al., 2021).

The ICN was instrumental in promoting the sustainable development goals into action among nurses through an awareness campaign entitled *Nurses: A voice to lead health for all*. The campaign featured clear and accessible online information, case studies of nurse's contributing to the sustainable development goals, and resources in several languages (ICN, n.d.). The sustainable development goals have universal global agreement among all UN member countries

(Rosa et al., 2021), which is significant because the goals are directly related to the role of nurses everywhere and the global efforts by nurses to support planetary health.

In the literature, scholars pointed to examples of nurses successfully engaging in political advocacy and policy initiatives including campaigning for clean air, calling for the elimination of nuclear weapons, reducing pesticide, herbicide, and antibiotic usage in agriculture, and testifying among government legislators (Kurth, 2017; Lilienfeld et al., 2018; Terry et al., 2019). These organizational and policy initiatives provided examples of the sustained presence of nursing to impact planetary health and served as lessons for raising climate change mitigation concerns as a professional mandate within all aspects of nursing.

Researchers highlighted that while everyone is vulnerable to the impacts of climate change, not everyone has the same resources to appropriately address the situation (Rasmussen, 2023). As awareness of planetary health challenges grow, the needs of those rendered most vulnerable are becoming increasingly linked to calls for global action on climate change (Nicolas & Breakey, 2017). Nurses have a critical role to play in supporting policy and advocacy efforts within health care, and at all levels of government, to promote human health on a global scale.

### **Literature Review in Summary**

Within the literature, nurse scholars drew increasing attention to climate change as an indicator of declining planetary health and the far reaching direct and indirect impacts on human and more-than-human health. Many authors exposed climate change's disproportionate impact on the health and well-being of vulnerable, marginalized, and disenfranchised people and populations. Scholars demonstrated a growing consciousness among nursing scholars who recognized the urgency of this moment. They advocated for increased disciplinary awareness that

situates the work of nurses at the front line of global challenges, pointing out that the care needs for those who are most affected will increase significantly with time.

As scholars examined the work of nursing as it relates to the environment, I noticed increased discussion on the positionality of nursing within health care systems. The context of nursing practice as situated both downstream and upstream to planetary health challenges was used by scholars to describe two different perceptual orientations. When describing nursing downstream of environmental challenges, authors emphasized nursing practice challenges of resource efficiency and management, the burden of demand on nurses, and the futility of nurses' actions that do not address causation of existing challenges. When describing an upstream context of environmental challenges within the nursing profession, scholars focused on preventive solutions that addressed the root causes of environmental health challenges such as, but not limited to, structural inequality, capitalism, and privatization. The role of nurse advocates for climate justice within solutions-based community approaches that are inclusive of the needs of the most vulnerable and marginalized people of society, factored strongly in the literature. In examining planetary health and nursing, scholars recognized both the imperative for nurses to respond and adapt to the immediate health and wellness needs of individuals while at the same time engaging in broader concepts of health equity through efforts aimed at mitigating planetary health challenges such as climate change.

Along with discussion on the positionality of nurses in relation to planetary health, nurse scholars within the literature described a values clarification within nursing toward mobilizing a broader social mandate throughout the profession. Values of caring, fairness, and advocacy were discussed as integral for understanding the nursing profession in a planetary health context and

further informing the value of social justice at this critically important time. The emphasis on social justice throughout nursing literature was a poignant call for nurses to shift their consciousness toward not only climate change, but environmental justice. Climate justice speaks to the intersection of environmental challenges and people who are the least responsible for the causes yet are the most adversely affected by the impacts. Scholars described climate justice as a rallying point from which the nursing profession, long grounded in social justice and advocacy, could recognize itself in the role of climate advocate for planetary health. They described how the nursing profession has been finding its voice in planetary health and documenting how nurses attend more deeply to environmental concerns through a critical awareness that includes supporting the integrity of the natural world.

Within the literature, nurse researchers also emphasized the need for a paradigm shift in how environment is understood and taken up by the discipline. Arguments supported a reorientation of the term toward planetary health and the challenges of planetary decline. Nursing scholars reimaged the environmental principles articulated by Florence Nightingale as a deep historical connection to environmental health advocacy to inform current nursing practice. Looking back on the nursing profession, scholars noted a lost legacy of nurse leadership in environmental health (Butterfield, 2013; Terry & Bowman, 2019). I noticed that it remains unclear to nurses what an ecological environmental paradigm would mean in the context of their practice as their work has remained focused on an internal, patient-centred orientation toward the environment—and this needs to change.

Many nursing scholars applied a critical lens toward the historical development of nursing knowledge and practice, questioning assumptions, and acknowledging limitations of

nursing's conceptual framing of the environment. This included critical reflection on the historical legacy of colonialism and hegemonic notions of allopathic Western medicine underpinning the development of the nursing profession's ontology and epistemology. Specifically, scholars described how ways of knowing such as ancient healing traditions and Indigenous knowledge have been marginalized or erased from mainstream nursing practice and need to be included.

Critical nursing scholars highlighted the significance of structural barriers in society and sought ways to reclaim space for other world views to be expressed and marginalized voices to be heard and listened to. Scholars also described and theorized broader paradigm conceptualizations of nursing in relation to the environment. This included, for example, conceptualizing nursing with Indigenous and ecological perspectives of Western science in how human health is interconnected with diverse species and planetary systems. Nursing theorists described an ecological paradigm for nursing practice and the opportunity to direct research toward nursing knowledge and practice that encapsulated a broader professional consciousness and responsibility toward planetary health.

As the largest and a highly respected group of health care professionals, scholars highlighted the significant role nurses have in supporting planetary health initiatives locally, regionally, and nationally. They showed that as planetary health awareness increases among nurses, so too is the number of nurses engaged in workplace initiatives and community activism. Key nursing roles for planetary health are cited throughout the literature including collaborating with other health professionals, leading initiatives, influencing workplace culture, and developing educational opportunities within all levels of nursing education. The leadership

potential of nursing is inarguable as scholars repeatedly emphasized how the experience of people from diverse gender identities, geographies, abilities, sexual orientations, and ethnicities vary greatly in their exposure, vulnerability, and capacity to respond to the health hazards resulting from planetary decline. The alignment of nursing values within a planetary health context reflected the relevance of concerns for nursing and was inspiring nurses to find their voice as advocates. I found in the literature that nurses were motivated to act when they witnessed the connection between environmental health and the vulnerability of the people and populations they serve. A variety of innovative and comprehensive planetary health models for nursing education, practice, and research have been proposed to encourage and support nurse engagement.

In summary, researchers showed that collective action through nursing organizations, in terms of policy initiatives, position statements, and engagement campaigns, were significant drivers of planetary health advocacy within the nursing profession. Regional, national, and international nursing organizations have been networking and collaborating within interdisciplinary health alliances and calling on governments to act urgently on global planetary health challenges such as climate change. Calls for action have included commitments to the UN sustainable development goals, renewable energy, waste and pollution reduction, and for nurses to question structural barriers to sustainable health care practices.

### ***Discussion: Insights From a Frozen Culvert***

This literature review of nursing's engagement with planetary health demonstrated a growing awareness in the nursing profession of the significance of planetary health impacting human health and the concomitant imperative for nurses to come into their own awareness of the



challenges and actions they can take. I found a hopeful strength within the literature in descriptions of how nurses have already and continue to participate at grassroots levels, find communities of practice, and take collective action locally and within the networks of various organizations.

While contemplating this discussion of nursing literature regarding nurse engagement in planetary health, I reflected on the challenges of a frozen culvert not far from my writer's desk. Last winter it sat frozen waiting to drain in the spring thaw. This frozen culvert came to represent a blockage. Throughout my assessment of the nursing literature, I reflected on this metaphor's relevance to the conceptual limitation in mainstream nursing that blocks an embodiment of planetary health among nurses. I considered how the limitations of nursing knowledge and the narrow scope of the environmental paradigm within nursing practice have held nursing back from expressing planetary health as a broad professional mandate. I interpreted nursing scholars attempting to describe what a functioning culvert looks like, what is needed, and how to work together to support and manage the flow of planetary health challenges. While nursing literature acknowledged a delayed response to the challenges of planetary decline, the flow continued around or under the culvert, risking the very structure of our social systems.

I reflected on seminal nursing scholars such as Butterfield, Kleffel, and Lausten who have for many decades described nursing's engagement in planetary health and expressed their concerns for the future. The nursing literature pointed to many poignant, yet fragmented calls for nursing engagement that have never grown into a full disciplinary global movement. However, while it is easy to focus on nursing literature as an articulation of ineffective mobilization among nurses toward the large-scale political and social solutions necessary for planetary health, like a

frozen culvert, we then fail to appreciate how social movements begin with one slow drip. However long that slow drip stays the same, there is nevertheless movement. Planetary health is increasingly coming into focus for nurses and the literature reflected a growing awareness among nurses to realize the significance of a growing crisis to human and more-than-human health, specifically in the disparities of health impacts on populations rendered vulnerable. In a frozen culvert with the right conditions coming together, a slow drip will start to speed up over time and become a trickle, a shower, and then a stream. Similarly, nursing literature reflected the power of individual collective actions to break down barriers of inaction through educational initiatives, policy development, political advocacy, practice awareness, and activism.

This literature review revealed my own initial blockage in acknowledging what is being described by nursing scholars and what is possible within the nursing profession. To prepare a comprehensive literature review, I initially focused on identifying variety in nursing scholarship and the complexity of the challenges blocking collective action in nursing. However, I have come to appreciate that the strength of this work relates to how individual nursing actions, like a collection of seemingly insignificant drips, demonstrate how movement can channel a flow that builds support for managing the growing planetary challenges.

While growing and gaining momentum, there are gaps in the nursing literature relevant to planetary decline. One key gap identified was a lack of research on nursing interventions related to planetary health. A scoping review completed by Lilienfeld et al. (2018) identified eight categories of nursing engagement related to climate change, but research was absent from the list. While nurse authors continue to envision the significant potential for progress through nursing action, I am concerned with the timing of action beyond local solutions to meet the

urgency of planetary health challenges such as climate change. A *now or never* warning by scientists to mitigate the worst impacts of planetary health within this decade is at stake (IPCC, 2022). The risk of unabated planetary decline and the future collapse of social structures within Western civilization are not significantly nor sufficiently discussed in the nursing literature. As people realize how uncertain the future is, this may lead to increasing challenges for collective action and risk further planetary decline that will be catastrophic for future generations. Scholars described some of the experiences and challenges nurses face, but the significance of personal and professional preparedness for nurses given the scale and severity of planetary decline impacts was under-represented in nursing literature. Finally, also missing within nursing literature were descriptions of the anticipated planetary health challenges in a way that acknowledges the potential collapse of unsustainable health systems and what alternatives might look like.

### ***Questions Arising***

As I developed and wrote this literature review, nurses were witnessing an escalation of the social and health disparities among vulnerable populations during the global COVID-19 pandemic. This most recent public health crisis served as an important illustration of societal vulnerability. Since there is currently no international adherence to intergovernmental action plans that might limit global warming to 1.5°C, coming to terms with the gravity of planetary health challenges should invoke urgent advocacy among nurses for the mitigation of climate change and resiliency to adapt to a future of unprecedented health care needs.

There was a consistent call throughout nursing literature on planetary health for the important and historically relevant values of the nursing profession to engage in ecologically

minded practice including fairness, advocacy, and social justice. Absent, however, was the centring of caring and its relevance to a broadening perspective of engaged nurses who consider the interrelated needs and value of all life forms on the planet. Finally, this literature review recognized that nursing research has overlooked the voices of nurses who were already engaged in planetary health.

Given these gaps, the following questions now guide the development of my doctoral inquiry:

- Are there nurses who exemplify an ecological perspective, and if so, could they empower others?
- How do ecologically conscious nurses integrate their knowledge and thoughts into practice?
- Where are ecologically conscious nurses located and what activities are they involved in?
- What are the structural barriers such nurses face?
- What is the role of caring that is critical, understood in part as nurse advocacy and action regarding issues of social injustice (Falk-Rafael & Betker, 2012) in ecologically conscious nurses' experiences?

These questions about ecologically conscious nurses and the ontology, epistemology and praxis of critical caring as it relates to nurses bearing witness to the devastating relationship between the climate crisis and health are driving this research inquiry. They also reflect my own journey in seeking meaning as a parent, partner, and nurse researcher in the context of planetary decline.

## **Conclusion**

As a starting point to my research, I conducted this literature review to illuminate how nurse scholars are defining, engaging, and envisioning nursing knowledge and practice in a growing awareness of planetary health decline. I provided a literature review search strategy and synthesized article content into the following seven sections: planetary health challenges and impacts, nursing awareness, professional values clarification, reconceptualizing nursing's foundation, nursing's paradigm of environment, nursing action, and organizations and policies. I then provided a summary and discussion of the literature and highlighted arising questions that guide this doctoral dissertation in subsequent chapters.

### **Chapter 3: Methods**

Through the analytical lens of critical caring theory, the goal of this research was to explore the journeys, approaches, activities, and priorities of nurses engaged in planetary health in order to identify nursing perspectives on how adaptation and mitigation efforts are experienced by nurses to inform the knowledge and practice of nursing. Indeed, the purpose of this ethnographic qualitative study was to explore the intersubjective experience of registered nurses as social action and to highlight the social significance in their work.

I begin this chapter by identifying and describing my ontological and epistemological philosophical assumptions. I outline my study design, which includes my research framework and methodology diagram. Next, I explain my sampling strategy and recruitment of participants. Ethical considerations of this research are included along with the successful completion of the ethics review protocol to conduct research through York University. I explain the data collection methods involving semi-structured interviews, participant observations, and arts-informed participant self-reflections. I provide a data analysis approach along with an outline of rigour including sections on credibility, transferability, dependability, confirmability and addressing bias. This chapter ends with a conclusion.

#### **Philosophical Assumptions**

I assumed that research participants shared multiple perspectives toward this research study based on their own life experiences. While I am aware of *la deformation professionnelle*, described by Barrett (1958), which is a tendency to see things from the viewpoint of an occupational bias or a professional specialty, my positionality as a nurse researcher was essential to focusing on the questions that I sought to answer within the nursing profession. The following

paragraphs outline characteristics of my ontological and epistemological assumptions that informed my choices of purpose, design, methodology, analysis, and interpretation of this research. While describing philosophical assumptions, I sought to remain reflexive and unfixed in my own awareness and knowledge of any one position, so that I remained open to the possibilities of this research experience.

I consider the distillation of my thoughts to be expressed through my actions, which in turn inform how I experience and learn about the world. I inhabit physical, social, cultural, and spiritual constructs that inform my ontological awareness consciously or unconsciously, yet I value the idea that “knowledge is not a thing or a system, but an ephemeral, active process of relating” (Stacey, 2003, p. 3). In this way, knowledge occurs through the communicative interactions of human relationship; it is transient and not located in me as an individual. As a nurse I am drawn to relational practice to guide interpersonal communication and self-awareness (Doane & Varcoe, 2020). Valuing opportunities to be in relationship with others, I chose qualitative methodology because it allowed me to emphasize the verbatim descriptions of nurses engaged in planetary health. I also chose ethnography to guide the telling of their stories in ways that were relevant and meaningful to the nursing profession. I focused this ethnographic research on detailed descriptions, observations, and artistic reflections that offered multiple points of view into the data and converged the interpretation of perspectives shared by the research participants.

I valued the practicality of shared ideas to support individual and collective activities for planetary health. Pragmatism as a philosophical tradition reflected my research interest in dialogue toward shared meaning in how nurses are actually doing planetary health work (Ansell, 2015; Doane & Varcoe, 2005). Pragmatism is a philosophical approach or assumption that

prioritizes practical consequences and real-world applications as the key criteria for determining meaning, truth, or value (Bernstein, 2010). I valued the sharing of experiences for their practical consequences and opportunities for learning. I also appreciated John Dewey's contributions to interpretivist philosophy as a leading representative of pragmatism (Dewey, 1925). Dewey provided examples of knowledge development that are adaptive to circumstances and remind us that new conflicts and challenges require new approaches (Bernstein, 2010; Dewey, 1925; Houghton et al., 2012; Pratt, 2016). A pragmatic interpretation of research encounters both ontological and epistemological assumptions that can be assessed by how things come together and how the subsequent outcomes or consequences provide a standard for action and thought (Houghton et al., 2012). Pragmatic thinking is moving away from static abstractions and categorical ways of thinking and knowing and looking to what is possible through the experiences of nurses (Doane & Varcoe, 2005). Therefore, central to this research inquiry was valuing the practicality of knowledge gained through the experiences of nurse participants.

This research explored interviews, observations, and artistic reflections shared by nurses facing planetary health challenges. It did not seek to quantify results from a particular date and time or to provide a measure of absolute answers to the complex challenges of planetary health. Therefore, a qualitative methodology was philosophically congruent with identifying patterns of convergence in the ideas of registered nurses and describing the implications for practice, policy, education, and research within the nursing profession.

### **Study Design**

As a researcher, I was and continue to be interested in the lived experience of registered nurses who care about and are engaged with planetary health concerns. The research design I



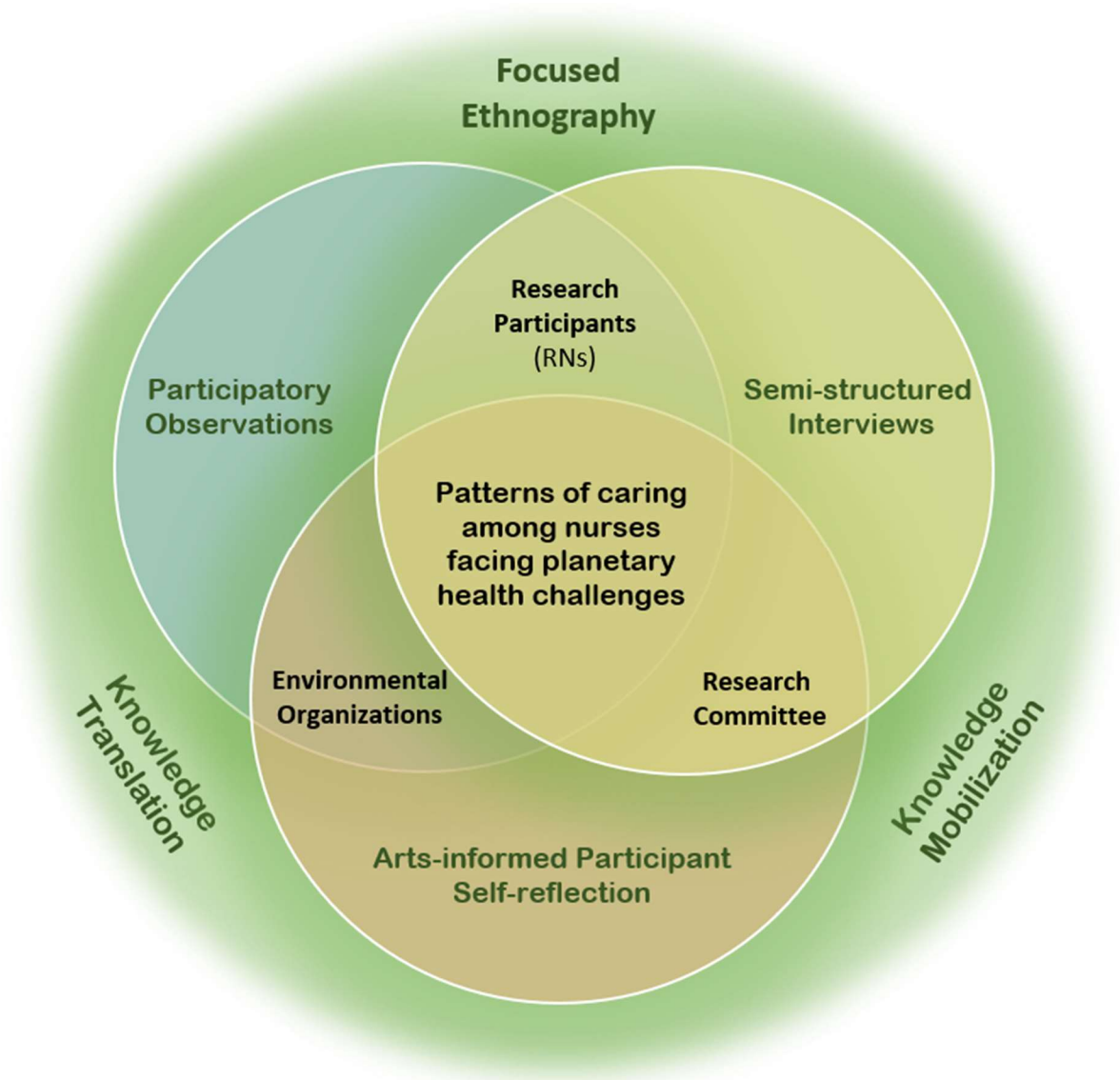
chose is located within an interpretive paradigm introduced in the 1920s by Max Weber who argued for the importance of subjective understanding of the meanings that individuals attach to their own actions (Muecke, 1994). Creswell and Creswell (2018) identified five main qualitative research approaches that share common characteristics within an interpretive paradigm: phenomenology, grounded theory, narrative research, ethnography, and case study. I chose ethnography for its emphasis on the exploratory nature of this interpretive research design as I sought to give voice to nurses in their own context using verbatim quotations and rich descriptions (Florell, 2020; Muecke, 1994). Ethnographic research uses both interaction and observation of participants to study people in their own environment (Fetterman, 2020). As this research was intended to inform nursing knowledge and practice, the principles associated with a focused ethnography were well suited for the fieldwork and conceptual orientation of a single researcher (Cruz & Higginbottom, 2013; Muecke, 1994). Furthermore, a focused ethnography is a problem-focused, context-specific, and time-limited exploratory study conducted among a small number of participants (Cruz & Higginbottom, 2013; Higginbottom, 2011). It is an established methodology for nursing research that seeks meaning among nurses adapting their practice to a new social context (Cruz & Higginbottom, 2013; Muecke, 1994). Data collection is episodic and often uses a combination of partially structured interviews and participant observations (Cruz & Higginbottom, 2013; Muecke, 1994). A focused ethnography approach is also well suited for using technology during interviews by enabling the researcher freedom to ask questions while making a detailed transcription record. I used video conference technology to attend and observe several nurse-led meetings of environmental groups throughout North America. As a registered nurse engaged in planetary health issues, I shared specific knowledge

with the research participants and employed pre-selected interview and observation topics for this inquiry, both which were characteristic of a focused ethnography (Cruz & Higginbottom, 2013; Muecke, 1994). In summary, focused ethnography was well suited to my study's goals of highlighting the research participants' perspectives on the elements specified in each of my three research questions. I was empowered within this methodology to relate effectively to the research participants through a shared knowledge of nursing and planetary health, conditions that were necessary to perform the three data collection methods as described below.

The research framework and methodology diagram in Figure 3 on the next page, represents a triangulation of data collection that informed this focused ethnography. The three-circle Venn diagram illustrates the use of semi-structured interviews, participant observations, and arts-informed participant self-reflections. The intersection of the three circles highlights the importance of the research participants, their affiliation to environmental organizations, and my supervisory committee members as centring influences of this research project. The core of this research is indicated at the centre of the diagram, representing the integration of patterns of caring among nurses engaged in planetary health challenges. Knowledge translation and mobilization are indicated on both sides of the outer ring to emphasize principles of co-production in this research, my desire to ensure the usability of findings, and my intentions regarding the eventual dissemination of results (Lapum et al., 2014).

**Figure 3:**

*Research Framework and Methodology Diagram*



For a comprehensive flowchart that visually illustrates the steps I took for participant recruitment and data collection in this three-part research methodology, see Appendix 5.

## **Sampling Strategy and Recruitment**

I chose network sampling of registered nurses as a non-probability purposive sampling method (Polit & Beck, 2017). Network sampling, or snowball sampling, is a method of selecting participants who are recruited among a peer group, in this case registered nurses involved in environmental organizations. Network sampling is widely used in health research and is well suited for identifying participants for a focused ethnographic study that is seeking to answer specific questions from research participants who hold certain knowledge (Cruz & Higginbottom, 2013; Polit & Beck, 2017; Robinson, 2013). The goal in sampling is to locate a satisfactory number of participants to reach data saturation. Data saturation is achieved when enough information is gathered to replicate the study (Fusch & Ness, 2015; Polit & Beck, 2017).

To recruit research participants, I contacted and established rapport with four environmental nursing organizations (see Appendix 6). These nursing organizations held regular online meetings that I was invited to observe. Although for privacy reasons I cannot name the organizations, they all sought to educate, support, and foster networking among nurses in all nursing domains. They were nurse-led and occupied leading roles in influencing the ways in which planetary health advocacy is taken up by the nursing profession in North America. One nursing organization represented a localized community-based context, two were provincially organized representing a regional context, and a fourth represented a national context. I attended a total of six meetings.

I sent each group an information poster (see Appendix 7) and a networking letter to prospective participants (see Appendix 8) that they distributed to their members. A total of 30 registered nurses responded by email. I replied to each potential participant individually with a

letter of information (see Appendix 9) and invited them to meet by video link to discuss the research project in more detail. Fourteen research participants who self-identified as active within nursing environmental groups agreed to participate in the study and confirmed by signing an interview letter of consent distributed by email (see Appendix 10). This sample size for the semi-structured interviews allowed for probable commonalities and was sufficient for adequate patterns to emerge from the data.

### **Ethical Considerations**

As a novice nurse researcher, I was required to meet the highest standards of integrity in research. Since this study involved human participants, it was subjected to the York University Faculty of Graduate Studies ethics review protocol process before research activities could begin. I incorporated measures in my methodology to prevent harm to participants, maintain confidentiality, and ensure participant choice and input. In addition to these measures, the review process was designed to uphold ethical practices and protect my research participants from anything unintended that might be considered unethical. The ethics review protocol was approved in December 2020 and renewed in November 2021.

Once I had established rapport, I discussed opportunities for participant observation and shared letters of information with participants' environmental organizations (see Appendix 11). Some of participants confirmed involvement by completing the organization permission forms (see Appendix 12). I also obtained consent from all other participants at each meeting (see Appendix 13). Participants who expressed interest in sharing their art then completed an arts-informed self-reflection letter of consent (see Appendix 14).

## **Data Collection**

Data collection consisted of semi-structured one-to-one interviews, participant observation meetings, and arts-informed participant self-reflections by interested subjects. I scheduled meeting times to collect data based on mutual scheduling availability.

### ***Semi-Structured Interviews***

I conducted interviews for this study via Zoom, a web-based interactive meeting platform, during mutually agreed upon dates and times. Participants in the semi-structured interviews used personal computers or mobile devices. As participants were not required to travel, no financial compensation was offered. I conducted web-based interviews offering participants to choose their own setting to support their comfort. For the interviews, 12 participants joined the video call from their homes and two joined from their offices. Semi-structured interview questions provided topic structure for the conceptualization of the research questions and enabled participants to define their own field of expression (Gaudet & Robert, 2018). I asked each participant the 10 interview questions presented in Table 1 below:

#### **Table 1:**

##### *Interview Questions*

#### **Journey Questions**

1. Would you please describe your early experiences of nature and how they came to be.  
(Probes: Describe the relationships/connections with certain people, animals, or places).
2. How would you describe your relationship to the environment? (Probes: What does being ecological mean to you? When and how did you form an ecological consciousness?)

3. How do you or have you come to experience climate and ecological crisis in your role as a Registered Nurse? (Probe: How have those experiences shaped your perspective on caring as a nurse?)
4. Would you please describe any challenges you have had as a nurse in terms of issues associated with climate and ecological crisis? (Probes: What do you struggle with? What stresses do you face?)

### **Approach Questions**

5. What is your perspective regarding the current climate and ecological crisis issues you face as a nurse? (Probe: How do you make sense about what is going on in the world?)
6. How has your understanding of the current climate and ecological crisis informed your approach to nursing practice?)
7. What sustains you as a nurse who is engaging in climate and ecological crisis issues? (Probes: Do you draw on a faith/hope/belief system? What relationships sustain you?)

### **Activity Questions**

8. What are the current climate and ecological crisis activities that you are participating in? (Probes: Why have you chosen those activities? How is your role as a nurse involved, and if not what is the reason(s)? Who do you work with in these activities?)
9. What climate and ecological crisis activities would you like to participate in but cannot? (Probes: What are the barriers (structural, social), for doing so?)

### **Priorities for Action Question**

10. What do you see as priorities for climate and ecological action within the nursing profession? (Probes: Related to education, research, practice, and policy. What would you like to see changed within the profession?)

The journey questions (1–4) explored the early experiences of research participants in the ways they associated themselves to nature, and their relationship or sense of connection to certain people, animals, and places. These questions also examined participants relationship to the environment, becoming ecologically aware, and their experiences and challenges of planetary decline within their role as registered nurses. The approach questions (5–7) explored the perspectives of research participants toward planetary health issues today and how their understanding of planetary decline informed their approaches to nursing practice. These questions also explored what sustained research participants in their engagement of planetary health issues. The activity questions (8–9) asked research participants to list the planetary health activities that they were participating in and to explain activities that they were not participating in due to potential barriers. The priorities for action question (10) asked research participants to describe what they saw as priorities within the nursing profession. A detailed procedural list is provided in the Appendix 15 interview guide. I wrote field notes during and after each interview to provide a unique footprint for memory recall of each unique participant engagement (Emerson et al., 2011; Phillippi & Lauderdale, 2018). I also audio recorded each interview and created verbatim transcripts that I sent to each participant, allowing them to edit responses for accuracy.



### *Participant Observations*

The aim of the participant observations was to provide a context of action by nurses through their engagement with other people. The observations situated me as the researcher within a marginal position (not fully in or out) of a social situation to collect an ethnographic account of the experience (Phillippi & Lauderdale, 2018). Six research participants arranged for me to observe their involvement in environmental nursing group meetings. I received organizational and group member consent before attending the meetings over Zoom. The five observation questions presented in Table 2 below guided field notes that I wrote during each of the six participant observations.

**Table 2:**

#### *Participant Observation Questions*

1. In what ways do subjects communicate in the group activity in a relational context?
2. How do subjects contribute to group decision making?
3. What are the organizational roles that subjects take on in the group activity?
4. What is the social context of the group activity in which subjects are participating?  
(Relational embodiment as representations of power, structural enablers & barriers, people (who is there and who is not there)).
5. What is the focus of the group activity and how does the subject contribute to, and/or take away from that focus? (Capacity building, overarching goal/target).

I designed the observation questions to answer the study's second overarching research question: In what ways do/can nurses embody their participation within organizations focused on

planetary health issues? I took fieldnotes in real time during each meeting using an observation grid described by Gaudet and Robert (2018) that included the following headings: situations to observe (regulations among participants, language, verbal and non-verbal expression), inventory of objects (instruments, tools, décor elements, documents offered), formal rules (explicit rules, indications about those rules), users of setting (number, gender, apparent age), who does what (division of labour, hierarchy), and the wider geographical context (access to the setting, description of the room). A detailed procedural list is provided in the participant observation guide in Appendix 16.

### ***Arts-Informed Participant Self-Reflection***

The third leg of my methodology culminated in an arts-informed participant self-reflection. I offered this modality as a creative opportunity for interested participants who wished to aesthetically express themselves and their work as nurses in the context of planetary health. Arts-informed research is a qualitative methodology that is influenced by infusing art, such as visual representations or performance art, into scholarly inquiry to enhance knowledge (Cole & Knowles, 2008). The arts-informed participant self-reflection provided an opportunity for interested participants to meet with me individually or as part of a group to creatively express an aesthetic knowing of their nursing experience regarding planetary health. The early work of Carper (1978) described the concept of aesthetic knowing as the art of nursing as it relates to nursing praxis and as a way of knowing among nurses to observe deeper meaning in a situation (Boykin et al., 1994; Chinn & Falk-Rafael, 2018). The arts-informed participant self-reflection as an emergent process of aesthetic knowing served as a methodological enhancement to the other research approaches that I presented in this project.

Arts-based strategies within nursing research value collaboration with participants and can aid in the removal of traditional boundaries between researcher and participants. This methodology also values art as action in the free expression of thoughts, emotions, and creativity (Archibald et al., 2017). Through the expression of art produced or represented by participants, this method enabled participants to aesthetically represent their feelings and experiences in ways that were free from the limitations of empirical knowing that could narrow their self-expression (Archibald et al., 2017). By embedding a review process in the arts-informed self-reflection activity, this methodology served to identify characteristics of complexity within the emerging findings and raised more questions and ideas about the expression of this research (Bochner & Ellis, 2003).

Within the arts-informed participant self-reflection, I prepared questions to explore my third research question, how do the participants view themselves as nurses and the work of planetary health within an arts-informed participant self-reflection? I first invited participants to take part in the arts-informed participant self-reflection during an email check-in of their interview transcript. I explained the intention of the reflective component and shared a variety of art exemplars to show participants “ways of seeing how they could get into the arts” (S. Wotton, personal communication, November 30, 2021).

After completing an initial analysis of interview data, I shared emerging findings with participants. I asked them to contemplate these findings within their own experience and consider submitting a new or previously made expression of art that integrated how they viewed themselves as nurses in the context of planetary health challenges. Over Zoom, I then met participants individually or as part of a group to share their art and speak of its meaning. As a

creative inquiry process, participants were open to express their own reflection in ways that made sense to them. When needed, I used the questions in Table 3 as prompts.

**Table 3:**

*Arts-Informed Participant Self-Reflection Questions*

1. In what way does this art represent the way that you are feeling about nursing engagement in planetary health?
2. Describe what guided your (created or chosen) art piece in relation to your journey into planetary health concerns?

I wrote fieldnotes following the group and individual meetings and included them in the general findings of this research. The arts-informed participant self-reflection contributed to the validation of this research and provided a sense of closure to the research participants. The arts-informed participant self-reflection portion of this research is outlined in the arts-informed participant self-reflection guide found in Appendix 17.

**Data Analysis**

My three-part methodology for this research project generated a large amount of data so I used the qualitative data analysis software NVivo 12 to manage information and produce robust defensible findings throughout this qualitative analytic process (Leech & Onwuegbuzie, 2011; Fetterman, 2020). I hand coded the analysis of textual data and used NVivo 12 as a codebook to outline the subject/themes/parent/and child codes in table form.

I chose thematic analysis for this data analysis because it offered an accessible approach that emphasized my reflexivity as the researcher within the subjective interpretation of this

focused ethnographic study (Braun & Clarke, 2006, 2020). The six phases of thematic analysis as described by Braun and Clarke (2006) align with Fetterman's perspective on ethnography in terms of telling stories about what something means to people in a credible, rigorous, and authentic way (Fetterman, 2020). Fetterman (2020) also described how patterns of thought and actions are repeated in various situations and among different individuals. This focused ethnographic research followed the theoretical edits and precepts of Fetterman by comparing the data to identify patterns, frequency, and categories.

***Phases 1–2: Familiarization and Coding.***

The first phase of thematic analysis was to become intimately familiar with the data of the participant interviews, participant observation fieldnotes, and arts-informed self-reflections (Braun and Clarke, 2006). I transcribed each interview and listened to the interviews again at different play speeds to correct and clarify the verbatim transcription. I included “ums,” “likes,” repeated words, laughs, and long pauses if they appeared significant to the cadence of the recorded speech. I made a point of indicating each of the 10 interview questions within each of the 14 transcripts. I also reviewed my interview fieldnotes and highlighted points that appeared significant. Once I completed all transcriptions, I emailed each one to the corresponding participant for an opportunity to make additional comments and edits. I updated edits within each of the transcripts and marked them as reviewed. I then reviewed and organized participant observation fieldnotes under each of the five questions from the observation guide and added jot notes to points that appeared significant. I coded participant observation fieldnotes along with the observation grid headings and my post-observation journal reflections.

During the second phase of analysis, I developed initial codes and labels to identify points of interest in the data (Braun & Clarke, 2006). I used NVivo 12 as a data management software to create a case for each of the 10 interview questions. Next, I reviewed the entire data set of all 14 interview transcripts and six participant observations for content relevant to each case and manually coded interesting features expressed in the data. This generated 430 initial codes that emphasized the research participants descriptive words. I gave full and equal attention to each data item. I shared a two-page summary of the initial findings with each participant who expressed interest in working on the arts-informed self-reflection activity. Five participants then completed the arts-informed participant self-reflection interviews; three joined individually and two joined as a group. The participant self-reflection interviews were then transcribed and coded within the data set of initial codes supporting commonalities in the descriptive experiences and adding further insights.

Inductive coding across the three data points—interviews, observations, and artistic reflections—provided me with a rich and thorough set of codes that identified analytically relevant aspects of my data set (Braun et al., 2016). At this point, I identified findings from my data set and focused a narrative description using multiple direct quotes as examples for my findings in Chapter 4.

### ***Phases 3–5: Theme Development, Refinement, and Naming.***

In the third phase, I began to organize the initial codes that were relevant to my focused research questions on participant journeys, approaches, activities, and priorities into sub-categories or clusters. I developed a higher level of patterns within the data by clustering my codes and giving broader meaning that indicated more than one idea (Braun et al., 2016). Typical

of the ethnographic approach described by Fetterman (2020), I repeated the review of data sets, or cases, to identify what appeared significant from each of the data sources. Moving within participant descriptive words, I began to define categories of codes that grouped similar subcategory ideas together in relation to my research questions (Braun & Clarke, 2006). I continued my analysis to generate the nature and character of potential themes using a non-linear process and revisiting the data to extract implicit meaning at higher levels of generality (Braun and Clarke, 2006; Vaismoradi et al, 2016).

The fourth phase involved reviewing themes. I went back through the whole data set to identify accurate representation and to support a compelling and coherent way of telling the participants' stories (Fetterman, 2020). I used schematic drawings and artistic reflections to support the development and naming of themes and sub-themes in order to consider an overall story to tell the reader about the data (Braun et al., 2016). I identified themes to report on meaning related to the central organizing concepts of journeys, approaches, activities, and priorities. I identified sub-themes to describe important aspects of the central organizing concept for each theme (Braun et al., 2016).

In the fifth phase, I refined themes and sub-themes to clarify, define, and express a focus for each and build a rich analytic narrative (Braun et al., 2016). I thought deeply about theme names and identified compelling data quotations to help explain theme definitions.

### ***Phase 6: Writing Up***

In the sixth phase, I compiled journal notes, jot notes, schematic drawings, and metaphor images to provide analytic commentary along with data extracts to present an analysis of themes and sub-themes for Chapter 5. Then in Chapter 6, I discussed the analysis of my themes and sub-

themes in relation to my research questions and current nursing literature. I also presented themes and sub-themes in relation to Falk-Rafael (2005) critical caring theory and the seven carative health-promotion processes.

### **Rigour**

Rigour is a broad concept in qualitative research that aims to ensure that the research is conducted in a reliable and valid manner by being thorough and careful to express quality throughout the research process (Gaudet & Robert, 2018). By being reliable, creditable, and considerate, a qualitative researcher can establish consistency in the research methods used and build trust or confidence in the study findings (Thomas & Magilvy, 2011). I was rigorous in my approach throughout the research process and paid deliberate attention to each of Lincoln and Guba's (1985) components of trustworthiness in qualitative inquiry: credibility, transferability, dependability, and confirmability.

### ***Credibility***

Credibility, according to Lincoln and Guba (1985), refers to the truth value of the data. I conducted participant checks to confirm the completeness of each interview transcript and to ask if findings represented accurate descriptions of participant experience. I checked in with research participants again following the analysis of emerging themes and prior to the arts-informed self-reflection activity. By including participant checks, I was able to correct errors in the data, gather additional information, and discuss inaccurate interpretations with participants.

Credibility was further enhanced within the study when my research supervisor Dr. Cheryl van Daalen-Smith did an independent review of the first interview question to see if identified categories and emerging themes were similar. To test credibility, Dr. van Daalen-Smith



purposefully excluded a key participant concept to see if I would notice. Fortunately, I did and brought it forward in discussion.

Finally, this research project valued triangulation of data to enhance credibility by providing three different sources within this focused ethnography. Triangulation in this context aims to examine the data to see if there is a coherent justification for identified themes and a convergence across different data collection methodology contributing to credibility of this research (Creswell & Creswell, 2018).

### ***Transferability***

Transferability refers to external validity or the degree to which the generalizability of the research can be transferred from one group to another context or population (Thomas & Magilvy, 2011; Morse 2015). I conducted this ethnographic research within a small sample size of a particular group of registered nurses who had their own unique demographic, psychological, sociological, and cultural characteristics. As a result, the degree to which generalizability of this qualitative research is judged by a potential user is facilitated by my emphasis on rich descriptions of original text from a detailed data base (Fetterman, 2020). Transferability is determined by the extent to which the results are transferable to other settings, rather than seeking to achieve congruency or fit in a general sense throughout the nursing profession. I attended to transferability in this research by drawing upon a range of experiences among research participants from which readers can decide if the research is applicable or not to nursing practice, policy, education, and research (Thomas & Magilvy, 2011).

### ***Dependability***

Dependability refers to credibility throughout the research process. A flow chart description outlining each step of the research process provided participants with clarity and transparency around participation in the research (see Appendix 5).

I maintained consistency in the interview questions for all 14 interviews, as outlined in the interview guide in Appendix 15, and audio recorded and transcribed interviews verbatim. To be organized and thorough, I reviewed the transcripts using NVivo 12. I created cases for each of the 10 interview questions to ensure that the review of all transcription data was relevant to the focus of each question. After repeated cycles of review of the transcription data, I prepared a summary of emerging findings and shared them with research participants based on a coding table of 430 individually identified codes. I also made the coding table available for review. Once again, I used NVivo 12 to organize, review, and code data from all six participant observations.

### ***Confirmability***

The findings, conclusions, and recommendations of this research are supported by a confirmability audit of the data (Lincoln & Guba, 1985). To be transparent about the process and procedures related to this research, as part of my confirmability audit, I provided access to materials I used to conduct this study. These included the raw data from audio-recorded interviews, hand-written fieldnotes, transcriptions, and coding that I used and that incorporated ethnographic strategies as outlined by Fetterman (2020). I provided examples of coding, theme development, and data reduction within the analysis of this research. Rich descriptive examples from multiple sources of data supported the emerging themes and patterns within the research.

### *Addressing Bias*

As a focused ethnographic researcher, I acknowledged that no research is bias-free, and I recognized the importance of making specific bias explicit in how I have come to this research project. I understood that trying to control my bias could limit this research effort and that uncontrolled bias could also undermine the quality of this focused ethnographic research (Fetterman, 2020). I sought to recognize the centrality of my identity as a researcher, my bias, and how my background and privileges as a researcher, shaped the lens from which I viewed this research inquiry. A significant risk within focused ethnography research is “that the boundaries of their focus unknowingly exclude what is relevant” (Muecke, 1994, p. 203). To counter the risk, I sought to strengthen my ability to remain reflexively open to contrary interpretations of the data. I used reflective journaling to provide an opportunity to express insights, acknowledge bias, and help shape my insider’s perspective during the research process (Fetterman, 2020; Hayman et al., 2012). By being reflexive throughout this research process, I tried to maintain an insider’s perspective yet bracket how I applied my perspective on the data. By keeping an open mind, I allowed for multiple interpretations of reality and alternative interpretations of the data within this study (Fetterman, 2020). I tried to let the themes emerge rather than project my own ideas onto the data.

### **Conclusion**

In conclusion, this chapter outlined the specific methodological details and choices within of my focused ethnographic study. I explained the triangulation method of three data collection points that added a level of complexity to this research and provided a valuable learning experience. I hope this chapter can provide others with a better understanding of the

three-part methodology I used for 14 interviews, six participant observations, and five arts-informed self-reflection exercises among research participants throughout North America.

## **Chapter 4: Findings**

This chapter summarizes the findings of 14 interviews, six participant observations, and five arts-informed participant self-reflections from the 14 registered nurses across North America who participated in this study. This narrative was guided by three overarching research questions. The interviews were guided by the first research question that looked at how nurses involved in planetary health are experiencing their journeys and what approaches, activities, and priorities guide their actions. The participant observations were guided by the second research question that explored in what ways nurses do or can embody their participation within organizations focused on issues of planetary decline. The arts-informed participant self-reflections were guided by the third research question that asked participants to express through art how they viewed themselves as nurses working in planetary health.

Throughout this chapter, I use the terms local, regional, and national to describe the context of an observed nursing environmental meeting. Local refers to the surrounding area or community in which a person lives. Regional refers to a province or state. National refers to Canada or the United States of America.

### **Demographic Information Summary**

Twelve participants identified as female, one as male, and one as transmasculine. Thirteen participants identified as White, one as Jewish. They ranged in age from 23 to 65 years with an average age of 37 years. Five nurses worked in community health, two in intensive care, two in sustainability, one in education, two were currently retired volunteers, and two were graduate students. The level of education among participants included two doctorate, four masters, one doctoral student, one masters student, and six bachelor of science prepared nurses. I

identified all participants by a pseudonym of their choosing. All participants completed an interview. Six participants invited me to be a participant observer at group meetings focusing on planetary health. Five participants volunteered to share their art and meet with me to complete an arts-informed participant self-reflection.

## **Findings: Interviews**

### ***Question 1: Early Experiences and Relationships***

To begin the conversation about environmental connection and nursing, I asked participants to comment on their early experiences of nature. This included relationships to people, animals, or places. Most participants described early experiences in nature as being outside and feeling immersed for significant periods of time. Participants described pets, animals, and backyards with trees as wild places where they lost time in nature. Parents played a significant role in providing activities such as camping trips, cottaging, and opportunities to attend summer camps. Participants also described relationships with friends, close partners, schoolteachers, and people demonstrating care for the environment as important early experiences.

Participants talked about early experiences living close to bodies of water, forests, and farmland, as well as memories of visiting special places such as oceans and mountains, as unique opportunities to connect with nature. Immersive experiences in nature during seasonal variations stood out in terms of hands-on-earth experiences among participants. Vivid descriptions of activities such as gardening, homesteading, tree planting, berry picking, hunting, and fishing included feelings of the rhythms of nature and seasonal cycles of local foods. Sally emphasized

these influences in her early experiences, “I spent a lot of time in the gardens and in the forest. Nature was a part of my childhood, and I was identified in our family as kind of a flower child.”

### ***Question 2: Relationship to the Environment***

I asked participants to describe their relationship to the environment in terms of when and how they formed a sense ecological consciousness or connectedness to nature. Several participants described ecological consciousness as a “way of being” or “a connectedness” unseparated from nature itself. Participants drew examples of their ecological consciousness by referring to their feelings of connection to nature as relational, being more whole, being more grounded, and having a deeper sense of appreciation. In addition, a sense of connection to places, such as wild spaces, forests, mountains, and water, featured prominently in their descriptions.

Some participants shared examples of how their knowledge formation and a growing awareness of planetary health concerns influenced their consciousness toward the environment. Several participants described Indigenous ways of knowing or a deepening sense of their respect and appreciation of nature-based spiritualities. Many participants reinforced the notion that humans are part of a larger whole within a living planet. Several participants expressed their humility toward the “other-than-human world” as informing their consciousness and a broader sense of responsibility to protect nature. Sally offered, “being ecological to me is walking lightly on the earth, recognizing interconnectedness between all living things, and understanding that the connection is just like a spider web.”

### ***Question 3: Experience of Planetary Decline***

I asked participants how they had come to experience planetary decline in their role as registered nurses. Several participants described not making a connection between planetary

health and nursing early in their career. All participants described experiencing concern and tension in their awareness of climate-related impacts and the scale and scope of future planetary health challenges in the absence of mitigation for human-caused GHG emissions.

Participants expressed their experiences of planetary decline as something lived, such as changing weather-related events, and as knowledge gained through news and information sources. They were concerned with experiences such as increased power outages, hurricanes, floods, heatwaves, and wildfires. Participants described how these events influenced their perception about patient needs in relation to the immediate and long-term implications of planetary health. As they witness the growing challenges of populations rendered vulnerable, all participants underlined the need for the nursing profession to understand climate change. Participants mentioned specific vulnerable populations including the elderly, children, youth, migrant workers, people with chronic illness, disabilities, mental health challenges, addiction, and those experiencing homelessness. Participants also expressed the additional stress associated with being a nurse during wildfire season and having to choose between staying in their community to provide patient care or leaving the area to protect their family's health. Participants with children raised concern for their children's futures and discussed the added responsibility of parenting while planetary health challenges escalate. Hannah summarized how the impact of planetary decline was coming into focus through her experience as a nurse:

This understanding that nursing could be part of a bigger picture of planetary health, the understanding impact of climate change on health, that for me has all come together recently. I understood those things before, but I never saw how nursing fit into that picture.



#### ***Question 4: Experiences Facing Planetary Health Challenges***

I asked participants to describe the challenges they experienced as nurses involved in planetary health initiatives. They expressed being personally and professionally challenged by inaction within health care systems and governments toward the real emergency of mitigating climate change. Several participants described the nursing profession as anthropocentric and often disconnected from nature and ecological thinking. They highlighted the challenge of changing human behaviour even with clear evidence of a climate emergency. Several participants described how people in general are uncomfortable thinking or talking about planetary health. Several participants found it challenging to have planetary health conversations and questioned the appropriateness of such conversations during patient care.

Participants questioned their ability to be effective nurses, struggled at times to build legitimacy, and lacked opportunities to focus on the root causes of climate change in their work. Some frontline nursing participants felt that their approach to nursing practice did not fit into the professional mould. Probing such feelings further, participants described an emphasis in their role as technician and lacking the ability to define for themselves what their role could be toward addressing climate change. Participants whose nursing practice was working with interdisciplinary teams for sustainable health care described input from frontline nurses as missing or on the fringe of their discussions. Several participants reflected on challenges including nurses as an historically oppressed group, the structure of nursing work around long hours, and government and public perception of nurses working at the bedside. Mabel highlighted the challenge of actively engaging in planetary health as a nurse:

I have to spend a lot of time thinking and rethinking about how [engaging in planetary health] works as a nurse and attaching this to nursing theory or the nursing process. When really, I feel like that is almost counterproductive... it's a level of bureaucracy that we don't need when we're trying to solve what is a nursing issue.

***Question 5: Perspective on Planetary Health Issues***

I asked participants to share their perspective of current planetary health issues as nurses and how they were making sense of the world. Many participant responses emphasized a sense of urgency to change local, national, and global systems to mitigate climate change and to adapt to a new world. Reflecting on their perspective of nursing practice, participants described concern for single-use disposable items, energy consumption within health care systems, and the ineffective waste streams for plastic. Many participants commented on the increased volume of personal protective waste during the COVID-19 pandemic. They expressed concern that transitioning away from fossil fuels would not be harmonious and that collective responses to mitigate climate change would be impacted by individualism within society. Participants described a desire for a just transition and environmental justice for populations rendered vulnerable due to climate change. They emphasized a link between cultural and societal issues, such as racism and inequality, with planetary health issues. Participants also expressed concern for extractive and harmful economies, commenting on capitalism and how it defines progress at the cost of exploiting natural resources and human labour.

Participants described their feelings about making sense of the world. Some commented on feelings of dread and concern for the dire consequences to planetary health without urgent action. Most expressed the importance of cultivating optimism and hope in response to feelings

of despair, as well as maintaining a connection with like-minded people. Several participants described the knowledge they carry about planetary health as a burden and that they risk being overwhelmed by concerns. Participants emphasized a need to not over think the work that they are doing and to protect mental health. Some participants described disassociating from their feelings to stay focused on the work that they can do. Some participants focused on a biological and ecological perspective of the world, referring to the fact that humans are animals existing as a species on the planet. Heather shared an informative perspective on making sense of the world during the planetary health crisis:

So, we've defined these imaginary concepts of progress and growth, what is healthy, what is normal and balanced. We have shifted away from what we actually need as humans on the planet to something really dangerous and so making sense of that for me is thinking about how these narratives really drive how we operate as humans.

***Question 6: Approaches to Practice***

I invited participants to share how their understanding of planetary health challenges informed their approach to nursing practice. Participants commented on the importance of leveraging the reputation of nursing as a trusted and respected profession in their approach to public engagement. They also underlined the importance of nurses providing an informed voice of patient advocacy toward planetary health within health care systems.

Participants emphasized a variety of communication approaches with colleagues and the public to help facilitate their messaging and conversations about planetary health. These approaches included telling stories, rather than emphasizing scientific facts and figures, and focusing planetary health concerns on what people value, such as their own health. Other

participant approaches included finding the simplest explanation possible, communicating solutions, and trying to model rather than preach about planetary health. Participants described the importance of using collaborative approaches that respect nursing workflow when suggesting or implementing planetary health initiatives in hospitals.

Collaborating with others featured prominently in participant approaches to engaging in planetary health. This included the importance of considering different political perspectives, meeting people with whom they may not agree, and using language that does not alienate others. Participants also expressed the importance of understanding their power and privileges as informative to their approach. They described getting out of their comfort zone, pushing the envelope, and challenging the status quo.

Participants described approaches that were broadening their nursing practice such as focusing on sustainable communities, food security, and connection with nature. They mentioned shifting their careers, furthering education to emphasize planetary health, and moving away from traditional nursing roles. Participants viewed themselves as part of a movement with the power of a collective voice to connect the environment and health. Anne Rodgers described her approach as a nurse engaging with politicians and the public, “for us it’s finding that balance between wanting to be at the table, but we need to raise the alarm and have that sort of advocacy for the broader public hearing us as well.”

### ***Question 7: Sustaining Engagement in Planetary Health***

I asked participants to describe what sustains them while engaging in planetary health challenges. Probing questions explored considerations of faith, hope, or belief systems, as well as relationships to people. Participants described being among plants, trees, and animals as

sustaining and drawing on nature to overcome challenges. Being active in nature through athletics and travel also replenished participants' energy. They also mentioned nature-based spiritual practices that helped sustain their work such as forest meditation and activities that recognize seasonal changes.

Building relationships with like-minded colleagues stood out as sustaining and gave participants the ability to express themselves openly on difficult subjects. Many described either forming or joining environmental groups with other nurses and health care professionals committed to working on planetary health. Participants described networking and mentorship opportunities among nursing students, professors, and people attending conferences as having a sustaining influence. They also described collaborating with others on work outside health care such as forest restoration and volunteering in non-nursing roles as a way to balance their energy. In response to the question of what sustains, Heather shared how she garnered meaning from interaction with smaller elements of nature such as grass or flowers:

I'm more fascinated by the minuscule than I used to be. I kind of have lowered my threshold for joy because I think that makes me more of a joyful person or allows me to be more joyful and most of that comes from nature.

### ***Question 8: Engagement Activities***

I asked participants to share what planetary health initiatives they were currently involved. Planetary health advocacy featured prominently as an activity within workplaces and communities, as well as regional and national initiatives. At work, participants were involved in green health practices such as supporting energy conservation, hospital waste reduction, and recycling efforts. Community-based activities included a municipal food round table, community

garden group, food-related climate emission reduction, active transportation promotion, forest and ecological conservation and restoration work, support for a regional biosphere reserve, and a baby turtle release program. Participants were involved in community, regional, and national advocacy initiatives that included participating in demonstrations and interest groups, writing policy briefs and resolutions, hosting information sessions, leading planetary health initiatives, seeking ways to increase relationships with Indigenous Peoples, and representing nurses concerned about planetary health within regional and national nursing networks.

Participants were involved in planetary health activities through nursing education as educators, master's and doctoral students, and conference presenters. Participants involved in teaching implemented information about planetary health into their lectures, curriculum development, and broader educational strategic planning. They led projects that involved student fellowships in planetary health nursing and research into environmental literacy. Graduate nursing student participants related their coursework to planetary health. Some participants also described presenting to nursing students as guest speakers and sharing initiatives such as the PaRx nature prescription program, Nurses Climate Challenge, and the Presidents' Climate Commitment within colleges and universities. Anne Rodgers described her involvement as a nurse in direct action:

It was a great experience to be out there in front of city hall, to have that feeling of direct action for our group because I've been there in the past as a social justice advocate or an environmental advocate, but not as a health care professional being an advocate for the environment.

### ***Question 9: Barriers to Engagement Activities***

I asked participants to describe planetary health activities that they would like to participate in but were unable to and then asked a probing question to get them to think about structural or social barriers they may have experienced in relation to their nursing practice. Participants who practised nursing within health care systems described structural barriers such as a lack of committed leadership, feeling alienated from nature within the design and delivery of services, and a disconnect from planetary health as a crisis. Participants described the slow rate of change within health systems and the politics of hospital administration emphasizing a business orientation as barriers for nurses to effect change. They also found that health care leaders lacked lines of communication with frontline nurses doing planetary health work. Participants who provided direct nursing care described a lack of flexibility in their workday to attend meetings and busy hospital stays for patients who are often too sick for nurses to incorporate environmental health into their conversations. As members of nursing environmental interest groups, participants expressed a lack of funding for paid positions as a barrier to the initiatives that could be developed if such resources were available.

Participants emphasized society's separation from the environment in an ecological context as a significant barrier to prioritizing planetary health. With a lack of a core environmental component from an ecological perspective, participants raised concern with the implications for educating future nurses facing the planetary health crisis. They also described a misalignment between nursing education and the urgency needed to mitigate and adapt to planetary health challenges. Participants referred to a gap between the academics of climate science and the applied practice of nursing as a barrier to incorporating planetary health within

the profession. Other barriers included being uncomfortable with political processes, preferring to avoid conflict situations such as debating issues or protests that involve civil disobedience, feeling pulled in many directions and stretched thin, and the emotional drain in trying to address multiple planetary health issues. Eric described the high physical and emotional demands of nursing as a barrier to having the additional time and energy required for planetary health advocacy, especially when it can be hard to see meaningful results.

Protesting and advocating for the environment is emotionally draining when so many are resistant to changing the status quo. I admire friends who have been doing this work for 20<sup>+</sup> years for small victories every few years. To sustain my interest and enthusiasm, I need victories more often than that.

#### ***Question 10: Priorities for Action***

In the final interview question, I asked participants to describe what they saw as priorities for action within the nursing profession. Most participants referred to prioritizing the role of nursing in planetary health as a multi-pronged approach that emphasized building awareness, increasing engagement in issues, as well as demanding political action from representative governments. Participants prioritized increasing the awareness of students, educators, and practising nurses toward a profession-wide knowledge of the eco-social determinants of health. Participants identified political advocacy by nurses at municipal, provincial, and federal levels with a priority to drastically decrease GHG emissions.

Participants identified other priorities including addressing inequality in climate-related vulnerability of people locally and globally, building resiliency in communities, and adapting



emergency responses and disaster planning for climate-related events. Eric shared a comment on a priority for nurses to engage in system change for planetary health:

...incentivize these changes, we've got to get people spending on the social determinants of health. Improving air quality, water quality, that kind of thing. That is going to have a larger impact than me recycling a cup in the hospital. It's finding a way to impact larger systems than just my patient that night.

### **Findings: Participant Observations**

The opportunity for me to observe meetings among nurses involved in planetary health groups enabled me to better understand how nurses are engaging in planetary health activities. I was invited to be a participant observer at four meetings in which my research participants were involved. I also observed two additional meetings through invitations from network contacts. All six participant observations, listed as PO1–PO6 in Table 4, were meetings of various environmental interest groups reflecting the participation of nurses at local, regional, and national North American levels. A participant observation grid summary is presented in Table 4 on the next page.

**Table 4:***Participant Observation Grid Summary*

<b>Name</b>	<b>Origin</b>	<b>Roles</b>	<b>Inventory of objects visible during participant observations</b>	<b>Rules</b>
PO1	National research meeting	1 leader/facilitator 1 presenter 10 participants	Introductions/agenda, consent, PowerPoint presentation, hand out links to planetary health	Online etiquette, review of Zoom features (raise hand, thumbs up, chat feature), questions welcomed during the presentation, timed agenda
PO2	Regional executive meeting	1 leader/facilitator 6 participants (executive members)	Agenda, land acknowledgement, consent, individual introductions, video meditation	Online etiquette, agenda with suggested timeline
PO3	National committee meeting	1 facilitator 18 participants	Introductions/agenda, consent, PowerPoint presentation	Online etiquette, timed agenda
PO4	Local interest group	1 leader/facilitator 15 participants	Agenda, land acknowledgement, consent, individual introductions	Online etiquette
PO5	Regional meeting general	1 leader/facilitator 10 participants	Agenda, land acknowledgement, consent, individual introductions	Online etiquette
PO6	Local interest group nurses and physicians	1 leader/facilitator 5 participants	Agenda, land acknowledgement, consent, use of video	Online etiquette
Adapted from Peretz (1998) in Gaudet & Robert (2018).				

A narrative summary of each participant observation meeting is provided in Appendix 18.

Five questions, provided in Appendix 16, guided my field notes for each of the six participant observations. This analytic step enabled me to code my field notes as findings that I have summarized below for each of the five questions.

***Question 1: Communicating and Relating to Each Other***

I began each field note reflection by recording how I observed nurses communicating and relating to each other in the group meetings. Four of the six meetings began with a land acknowledgement of traditional territories of Indigenous Peoples, based on where the leader

resided as well as other regions from where participants joined. The land acknowledgement in two of the meetings included the reading of a localized statement of Indigenous land rights and the necessity to recognize settlers' roles in land protection. In the other two meetings, the leader shared an image of an Indigenous land claim issue from current media, along with a contextual description of the image.

The leaders in all meetings expressed itemized agendas, three of which had specific times allocated for discussion. Most of the interactions between leaders and participants appeared to be well established, reflecting assumptions for meeting expectations and different degrees of comfort with online participation based on previous meeting attendance.

Participant engagement varied with attendees choosing to live-stream video with their full name, share a still image with their full name, or display first and last name or only first name. Those who shared only their first name appeared to participate the least when compared to those who chose to share their video and full name. Of the participants who shared live-stream video, most shared their room background, a few blurred their background screen, and during two of the meetings, two participants shared alternative background images of mountains or trees. On two occasions, two attendees shared their video intermittently expressing that they were multitasking, including one person who was painting a room. During another meeting, an attendee with video was breastfeeding a child. In two of the local meetings and two of the regional meetings, the leaders told people explicitly at the beginning to "do what they need to do" were observed and it was at these meetings where I observed participants painting, breastfeeding, sewing, or multitasking. In two of the meetings, two people let the group know they had to leave early. In two other meetings, two attendees left without notice.

During all meetings, participants who shared their video engaged attentively with presenters and were most likely to ask questions and make connections to nursing practice. During open points in the meeting, conversation flowed well among participants who asked questions and added to the discussion. In some instances, participants used the raised hand feature to let leaders know without interrupting that they had comments. One local group lamented about missing opportunities to meet for coffee due to COVID-19. In this instance, everyone agreed to make the best of technology to meet. In all the meetings, participants appreciated the ability to join from wherever they were. In one of the regional meetings, a five-minute body break followed a fifteen-minute meditation created an atmosphere of support and positivity among those attending.

Leaders explained ground rules in all meetings. The regional meeting leaders demonstrated an ability to engage with people they knew while also welcoming new people. In all the meetings there was an atmosphere of being among supportive friends, being part of something important, and having a safe space to discuss challenging planetary health issues. A sense of “keeping things real” was evident in the discussions, allowing people to be who they were and where they were at. Participants in the local or regional meetings encouraged each other to express the challenges they were facing. In two of the regional meetings, attendees used good humour and laughed during the discussions.

Group leaders created conditions to welcome new people and invited email follow-up in all groups. One group leader described “flipping” the meeting in order to begin with the group’s list of action items rather than starting with individual introductions. The idea was that new

people might be more interested in getting a sense of what the group was about at the start. Attendees also recognized and valued student participation in any of the groups.

### ***Question 2: Decision Making***

I recorded in my field notes how nurses were contributing to group decisions during each of the meetings. In most of the meetings, the agendas or discussions did not include decision making as a focus. Moving through regional group meeting agendas, leaders appeared to seek consensus by either asking for a show of “thumbs up” or providing time for participants to express alternative choices. During two regional meetings, leaders invited participants to join in shared document writing (Google docs) that enabled people to contribute their input directly to the agenda or discussion items. During these same meetings, leaders invited participants to answer real-time polling questions anonymously. They used this activity to help plan goals for the year and begin a strategic planning process inclusive to all members present.

### ***Question 3: Roles in the Meetings***

I observed the organizational roles that nurses demonstrated during the group meetings. These roles appeared as leaders, presenters, and attendees.

**Leaders.** Each meeting had a leader who facilitated the meeting. Leaders presented an agenda reflecting the nature of the group. In three instances, there was a timeframe for each agenda item. Leaders demonstrated organization by following the agenda and completing the meeting on time. The agenda also set the meeting tone and reflected the national or regional nature of the group’s activities. All leaders encouraged positive participation and welcomed ideas. Leaders frequently emphasized interprofessional collaboration and opportunities for involvement through their nursing environmental interest group.

**Presenters.** Presenters and attendees who shared information came prepared.

Presentations were in PowerPoint format with relevant images and bullet points to summarize information. Presenters reflected an ability to communicate ideas and demonstrated nursing engagement in planetary health in a way that inspired attendees.

**Attendees.** The attendees who shared real-time video introduced themselves when invited to do so. In local and regional meetings, many attendees described their current activities and, at times, how they were feeling. They often commented on work-life balance issues, energy levels, and an appreciation for others attending the meeting. In many instances, attendees actively raised questions and contributed to constructive discussions. The number of individual actions that people were involved in locally was informative of current events and inspiring toward what is possible by a small group of people doing extraordinary things.

***Question 4: Social Context as Representations of Power, Structural Enablers, Barriers, and People***

To understand the social context of the group meetings, I observed how power was represented, what structural enablers and barriers existed, and who was or was not present.

**Power.** The two national interest group meetings had the largest attendance. An elected leader or committee chair facilitated the meetings. One of the two meetings was recorded for public sharing. Extensive website resources and diverse environmental initiatives provided a backdrop to these meetings, which both focused on presented information. Leaders introduced attendees at local and regional meetings, but at the national group meetings, they did not introduce participants.

Leaders, and in two instances a committee chair, facilitated the four regional or local group meetings. Three of the four meetings focused on updating past, current, or future action items within the group. One meeting focused on strategic planning ideas generated by executive members. In each of the regional and local groups, leaders invited attendees to introduce themselves or provide an update of their work in progress. One local group, led by a physician and attended by both nurses and physicians, had access to additional funding for a facilitated strategic planning exercise that included forming mission and vision statements.

While I observed clear leadership and facilitation in each meeting, positions of power were not overtly expressed. In almost all meetings, attendees did not appear compelled to speak, other than when they were invited to introduce themselves. One leader used anonymous polling to invite attendees to share where they were from and what their interests were. On a few occasions, leaders turned off attendee microphones that were producing background noise.

**Structural enablers.** Attendees chose their own level of participation along with their disclosure of personal identity and video image. On three occasions, leaders encouraged attendees to be free to do what they needed to do. During those meetings, attendees got up, answered phones, or left early. One person was painting a room and another person breastfed their child. The leader limited screen sharing to presenters unless someone requested sharing rights. Features such as the microphone, raising hands, chat space, and emojis offered various forms of participation in each of the meetings. Online access enabled simultaneous participation among attendees from across regions. All groups had websites with accessible email contacts. One group referred to a Google Drive folder that housed meeting minutes and resources.

**Barriers.** All meetings took place during different levels of social lockdown due to COVID-19 restrictions. While some of the group meetings had previously taken place in person, all meetings were hosted through the videoconferencing platform Zoom. The online meeting format appeared to limit engagement, particularly among attendees who chose not to share their video or full name. Leaders did not offer closed captioning or transcripts of any of the meetings.

I observed a lack of funding and available resources within local and regional meetings placed restrictions on the scope of initiatives. Attendees at three of the four local and regional meetings discussed financial limitations which appeared as a barrier to the kinds of advocacy activities they would like to be involved in. Activities or organizational logistic suggestions emphasized free or inexpensive ways of doing things to reduce costs. At several meetings attendees discussed seeking collaboration with other larger, funded groups as a way of creating opportunity to amplify their work. Only two of the groups mentioned having access to additional funding. The national interest group meeting PO3 described funding for two nurses to attend COP26, however, there was a shared sense that this delegation was too small of a national representation for the event. I observed discussions that included examples of advanced website hosting, financial services, copy editing, and a lack of an executive assistant as barriers to group activities due to a lack of funding.

During one of the national meetings, participants discussed the importance of highlighting the work of nurses in academic journals. An attendee shared that “nurses who are active in environmental causes do not have time to publish.” This comment stood out as a moment of pause in the discussion.



I did not observe formal minutes being recorded though it is most likely that someone was taking minutes or recording aspects of the meetings. Previous minutes were not shared with me, although in two instances minutes were shared by email and in two other instances executive members accessed a shared drive folder to access previous minutes. Two of the national meetings were video recorded. Joining the local meetings as an observer it appeared that most participants had attended previously and were participating in an ongoing discussion of the groups business. This appeared as a potential barrier for a new person to understand some aspects of the discussion.

**People.** Most meeting attendees who shared their video appeared to be White women. During all the observed meetings, only one person of colour shared their video and one participant appeared to have an Indian accent.

Several participants expressed their preferred gender pronouns as she/her in each of the meetings. One person identified themselves as he/them. Of the attendees who shared their video, 38 appeared to be women, five appeared to be male.

Most visible attendees reflected an age range between 30 and 50 years. Several of the more active attendees appeared to be of retirement age, a fact that was confirmed by one participant. Attendees at the PO4 meeting discussed growing membership as part of a recruitment strategy to “get the young people out” and to “invite older nurses who have more time to contribute to this effort.”

#### ***Question 5: Meeting Focus and Contributions of Group Members***

Through my observations, I intentionally recorded what I observed as the focus for each of the group meetings and how members of the meeting contributed or distracted from that focus.

The meeting agenda reflected each group's focus of activities. Local and regional groups consistently referred to actionable items that had been generated at previous meetings. The leader asked for updates to agenda items or moved the item to the next meeting when the person responsible was absent. While providing updates, individual members often included additional initiatives or planetary health concerns that they were working on.

During several meetings, speakers commented on the number of things going on, how different communication channels and people overlapped, and in some cases, how to manage competing priorities within a volunteer organization. Several groups discussed strategic planning and focused initiatives around identified goals and priorities.

Attendees encouraged participants who expressed interest in specific issues or action items that they had brought forward. On a few occasions, there appeared to be an expectation that people who shared a new activity or issue would lead the activity going forward and report back to the group.

Each of the two national meetings had their own focus; speakers presented research in one meeting and provided a report update in the other. The clarity of focus for each national meeting enabled a large group of diverse attendees to participate without significant background knowledge of the group's previous meetings or agendas. I observed that attendees were eager to share information and raise awareness around planetary health issues. During the two national meetings, attendees had constructive and insightful discussions, but I did not identify a clear commitment to actionable items or ideas.

The local, regional, and national nursing environmental interest group meetings presented attendees with opportunity to meet like-minded people and build friendships. Local and regional

group meetings reflected increased personalization in terms of support among members and a variety of commitments to group activities. National group meetings reflected engagement in nursing research and political processes. They also provided opportunity for like-minded people to connect and potentially contribute to sub-committee projects. All group meetings emphasized the importance of collaboration, encouraging balance in health and wellness, and strategies for positive messaging of planetary health challenges.

### **Findings: Arts-Informed Participant Self-Reflection**

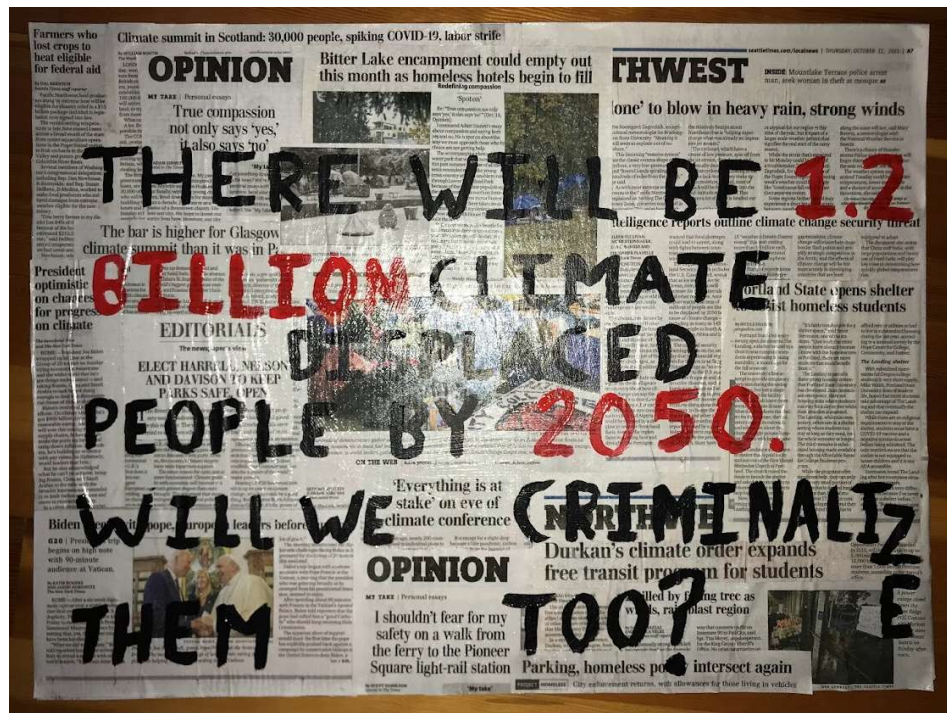
As part of this research project, five participants were willing to share an artistic expression of their work as nurses. I met all participants via video link—three in one-on-one meetings and two in a group meeting. Each participant prepared their artistic expression in advance and shared it with me during the meeting. The discussion at each meeting was free flowing and not structured around specific questions. I provided participants with two prompts: the first explored their feelings about their art as nurses engaging in planetary health, and the second asked them to describe what guided their artistic expression. Due to the open nature of these reflections, this section of my findings emphasizes participant voice as a narrative summary of the transcripts recorded from each of the arts-informed participant self-reflections.

#### ***Arts-Informed Self-Reflection: Charlie***

Charlie was the first participant to share their artistic expression. Shown in Figure 4 on the next page, they shared with me a political poster collage with a provocative statement about climate displaced people and the future. It reflected the challenges of the population they served as a nurse, people who were homeless and increasingly vulnerable due to climate change impacts.

Figure 4:

*Charlie's Artistic Expression*



Charlie described a recent election in which the elected candidate was in favour of removing homeless encampments and did not support the creation of high-density housing. Following the election, Charlie took the candidate's yard sign and used it as the base of a collage of local newspaper articles that discussed either homelessness or climate change. One side represented the elected official's views and the other side represented conversations about climate change and housing in the media. In describing the inspiration behind their art, Charlie said "I felt that there's still a huge juxtaposition in terms of acknowledging that climate change needs to be addressed but leaving the most vulnerable behind and criminalizing them instead of supporting them through a crisis they did not create."

### *Arts-Informed Self-Reflection: Blue Bird*

Blue Bird's artistic expression, shown in Figure 5 below, was a picture of two birds sitting in her hand and a poem embedded to one side.

**Figure 5:**

*Blue Bird's Artistic Expression*



Blue Bird described having spent significant periods of time on an island surrounded by fresh water and nature. Living in an immersive natural environment was central to her being. She began our discussion by explaining the process behind selecting her artistic expression and “why I share some photos and some I don’t.” Blue Bird spent time creating images as “special

moments in nature” that come in different contexts and proximity to what is considered personal and what she is willing to share. “I don’t typically share the ones where I’ve been doing a nurturing of nature type of thing. I think for me, those are close context pieces, rather than on a greater, grander scale of addressing climate change.” Some of Blue Bird’s images showed her caring for injured animals and she chose not to share those moments.

I’m really sort of navigating through where I live in this environment and having impact, but also the nurse in me. I’m not just a nurse for humans. I’m a nurse for the environment, for the animals. It’s the same way that I tend to pick up garbage when I see it.

Blue Bird described many instances in which animals appeared to seek her help. “This fish came in and had a huge lure stuck in her and she came sort of close, almost looking like I could help her.” Of all her images, Blue Bird chose to share one that reflected positivity and connection to nature.

I think there’s just so much negativity out there and I think that’s probably why I sent you that one... I’m trying to get encouraged, being positive and hopefully even if somebody doesn’t have that opportunity, they can see that moment and get a good feeling from it, because I think that’s another part of where health comes through our connection with nature.

In reflecting on her feelings about nursing engagement in planetary health, Blue Bird said “I was raised this way, I don’t feel any other way than to be connected with nature, it’s just who and how I am.”

Inspired by a poem that I had provided as part of the invitation to participate in the arts-informed self-reflection, Blue Bird also wrote a poem beside the image as part of her artistic expression. Her poem reflected the deep connection she felt as a nurse that was inseparable from nature and was empowered by the guidance nature provides for life. Blue Bird described the image of holding the birds and sharing the poem as an “embodiment of qualities that I see intertwined with who I am and my actions for my whole life.”

***Arts-Informed Self-Reflection: Jen***

As part of her artistic expression, Jen decided to share a poem, shown in Figure 6 below. She had previously submitted the poem to a journal focusing on planetary health<sup>3</sup>.

**Figure 6:**

*Jen’s Artistic Expression*

Sometimes suns explode.  
Their stardust tells stories.  
And under all the right conditions,  
I am asked to be a character in your story.

You lead me on an adventure where we discover every part of each other.  
You learn my cortex and my fiber and my nodes and my ribs.  
I learn your epidermis and your veins and your roots and your irises.  
And we transpire and conduct electricity.

Now I pretend to be a bird with you,  
and you are also a bird.  
We fly to a far land where we make a new nest in a new tree in a new shape.  
Where you teach me truths.

You show me trails.  
I tell you things that sound nice.  
You encourage me to listen to your flowers, which have important things to tell me about time.  
Then together we sing and celebrate with fruits.

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<sup>3</sup> Article link shared with permission from Jen and the publisher <https://doi.org/10.1891/cn-2021-0023>



But sometimes your clouds scared me,  
which was funny,  
so we laughed.

Then some day you plant me.  
I become a tap root in your soil.  
We meet the sun's angle in every season.  
You introduce me to every rock and every cone and every creature that grew roots, too.

Maybe another day I go to the stratosphere,  
high enough to see you curve.  
But I come back down to feel you  
and all the living happening.

One day everyone I know  
dies.  
But not you. No, not you.

So you hold an earth burial, or a sea burial, or a sky one  
before we all go back to stardust together,  
and our matter recognizes itself,  
and it waves hello,  
and maybe it converges again.

She said her poem had originated as part of her wedding vows to her partner:

I wanted to pull together a piece that really drew from the environment and my connection to it. Basically, it's like a love letter, first to my husband. I thought, well, in general, I'm not somebody who expresses myself via the written word in this way. I do a lot of writing, but not creatively for this type of outcome.

Jen reworked the poem for the journal article by changing the object (her husband) to Earth.

In describing how her artistic expression represented nursing engagement in planetary health, Jen reflected:



When I wrote this, it wasn't so much about a deliberate, sort of reflection of my nursing relationship with the environment, or my relationship as a nurse with the environment. It was more about myself as a human and my relationship with the planet. But, reading it with that lens, I think it is. I think what comes to mind is relationship-based nursing, caring, as it came out, this piece goes both ways. So, clearly Earth was like a character in this story of mine and personified.

When asked how her art expression makes her feel, Jen commented how the poem was not something that she would have produced 10 years ago. She described becoming more comfortable communicating her feelings and having people from whom she learned:

Where I write about the biological parts of the earth that I'm learning and the biological parts of me that the earth is learning, I love that concept. It brings me a lot of joy when I read the end where we're trying to bring it back together into the idea that all of this is fleeting based on the way that I see the world.

Jen further expressed how a biological science-based understanding influenced her feelings of connection to Earth:

It's not a scary feeling to me, it's more one of comfort. It's like this is true, that makes me feel the comfort piece. Total destruction is not the right word, but just total void. Maybe back to what the universe or the planet was like before humans were around. Writing poems about it can be a reason for despair, but I think for me it's going back to what it is, it'll all just to be what it's supposed to be.

In referring to what guided Jen in choosing the poem in relation to her journey into planetary health challenges, she stated:

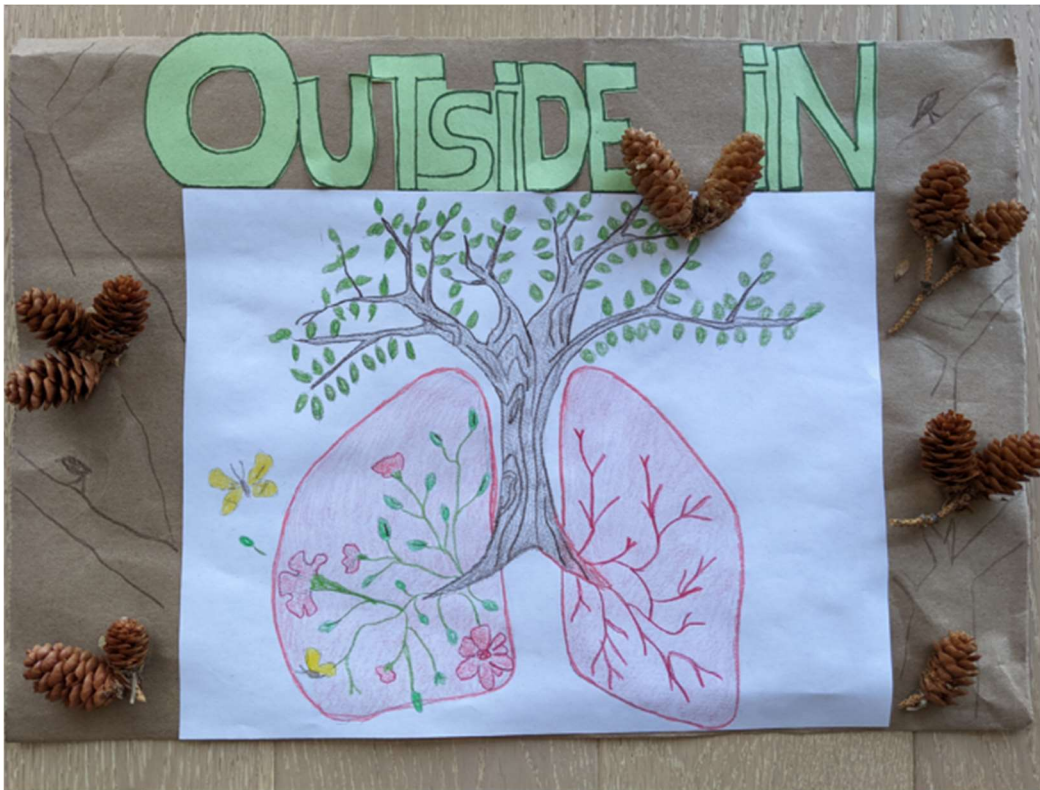
The beauty of the planet as I see it, and my relationship with that, both with the planet and with its beauty. The work that I do is more about solving the problems. Even looking at some of the examples of the art that you shared, the heartbreak and the challenges, and the issues that we have to face. You know, that would be a different poem if I focused on that. So this is pretty representative of my lowering the threshold for joy concept, that I just generally have a pretty dreary disposition and I look for the good things, and that's what's coming out in this. That despite the major issues we have, at the end of the day, what's happening on this third rock from the sun is still overwhelmingly mysterious and beautiful and interconnected.

***Arts-Informed Self-Reflection: Hannah and Mabel***

Hannah and Mabel agreed to meet with me as a group, joining from different time zones and enabling a special opportunity to discuss their artistic expressions together. Shown in Figure 7 on the next page, Hannah shared a three-dimensional poster picture developed in collaboration with her children.

**Figure 7:**

*Hannah's Artistic Expression*



Hannah began by describing her process of reflecting on a planetary health curriculum module that she had been developing with the question “what does planetary health mean to you?” With her two children, Hannah decided to draw the answer. “My kids made pictures, my daughter drew mountains with hearts in them and my son drew a beautiful mountain sunset scene. And then this is what I did. They helped me choose the colours.” Hannah described the meaning of her picture that included attached pinecones:

I made a tree, but it’s like the bronchial tree. It shows human lungs, but then they also have weeds and grains, and living things growing in them. It shows that we have the

outside inside of us and that we are inseparable from nature. So, when we breathe, the trees breathe, and when the sap flows, it's our blood that flows.

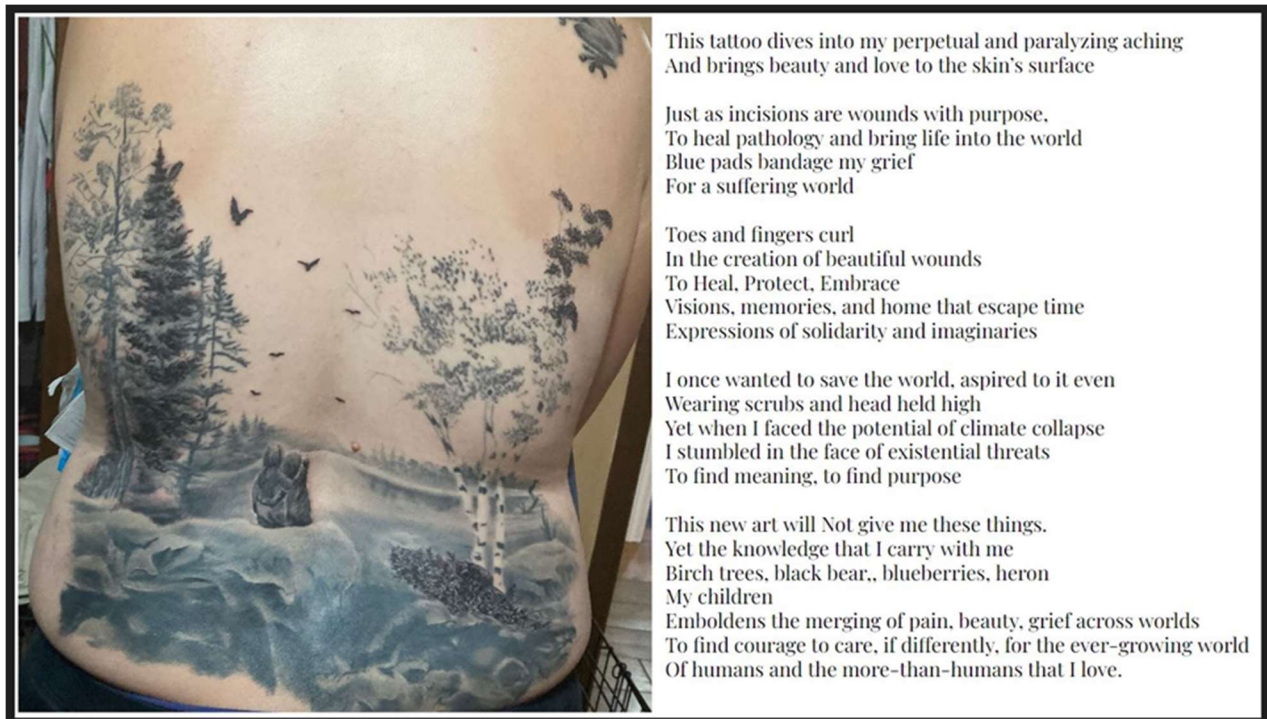
Hannah further reflected on the title of her poem "Outside In" that was inspired by a children's story that her daughter had borrowed from the library:

It's about a little girl walking through the forest and I realized the story was a lot about how we stay inside, and we close ourselves off from nature, but that nature still comes inside through the windows and through the wind and all these things and so I really love the story.

Mabel's artistic expression, shown in Figure 8 below, was a picture of a tattoo and a poem embedded to one side.

**Figure 8:**

*Mabel's Artistic Expression*



Mabel described her artistic expression as an important process of transforming the design of a previous tattoo in a way that anchored her in a natural landscape with her children at the centre. Mabel commented on the pain of getting the tattoo:

It really made sense for me, the physical aches and pain that I feel in the process of learning more about the sickness, the struggles, the suffering of our ecological systems, and what humanity has brought to the world. I think it's very unequal.

In choosing to share this artistic expression Mabel said:

My connection to nursing, my connection to this environmental work, this is incisions as art on my body. That really expresses my connection and wanting to be rooted on the planet, in nature. Talking about feeling, how we're inseparable, I wanted to bring these images of plants, animals and people and surrounding ecology. All that I feel so deeply in love with. I wanted that to be on my body and be a source of strength, as a reminder of what I'm doing next. I think it merges these worlds and gives me some energy. Like a consolidation of my identities and trying to move forward with nursing, past and present, which is forever changed I think by the new knowledge and life that I'm living.

Hannah shared her feelings about Mabel's poem as one of love but also pain. "Sometimes we have to feel that pain to move forward with this." Mabel described experiencing a few difficult years and trying to come to terms with the combined challenges of physical, emotional, psychological, and social pain.

Hannah interpreted Mabel's tattoo as an expression of hope but also of pain in not knowing how the environment will be for Mabel's children in the future. Mabel described the image of her children in the tattoo:

They're looking at this beautiful world and I've captured that and I don't know when we look back on that picture, if the next children in 40 years will be able to look at a world like this. So yeah, there's some grief mixed in.

Both Hannah and Mabel discussed their concerns for all people who will have to go through the pain of climate grief. They expressed frustration that the world's populations rendered most vulnerable have been expressing climate change concerns for a long time. Mabel said, "in many different places in the world they're virtually screaming at us that we need to do more, we need to go through this process especially people in the Western world whether that's Europe or North America quickly, very quickly." They further discussed different aspects of social-environmental initiatives and the power of communities to take control of their local resources when they work together. The discussion was free flowing, demonstrating a positive connection growing between Mabel and Hannah.

In asking both participants what guided their chosen art expression, Hannah described her art as a hands-on creation with her children, building upon their ideas as inspiration. It also helped her navigate more difficult conversations with them. She said:

Some of the climate grief that I feel, I'm trying to channel it in a way that is accessible for my children so that they understand what is to be sad about, but also understand what there is to celebrate. So, we try to bring nature in, outside into our lives as much as possible. I'm trying to kind of instill in my kids, to build that in them so that when they grow up, that they know we did everything we could. That we want a better world for them and that they have to carry on this fight if you will.

At this point in the conversation, both participants expressed a centring of their children within their art expressions. They discussed a sense of planetary connection through childbirth, and this inspired a sharing of email addresses for subsequent conversations between the two participants.

Mabel described what guided her art expression as a process that had started prior to this research project:

At first I was going to do a painting, but then I realized that I had been engaged for almost a year in crafting a painting on my body and that it was the best fit for this... I thought that this was a good place to trust it because it's about what I am, who I am and it's about me honestly trying to not be so afraid. I guess what I like to do is step forward more boldly and talk about making mistakes, and that being okay.

Mabel also reflected on the meaning of her tattoo and sharing a body-based art expression:

I think me sharing that with you is part of me trying to live more bold and more courageous and trying to lean back and lean into this next step and make it part of a process. My life is still linear. I'm growing older every year and my children do as well and I want to see what is next. What I can do with these next two years in my life, and I think being in the middle of my life is part of all that too, being at this turning point. I've had my children, they're growing, and I feel the years slipping away. I feel opportunities to care for each plant and animal, and to save some from extinction and things like that, these things are slipping through my fingers as the years go by. I really wanted to take

hold of that for a moment, like this [tattoo] a moment in time and bring it forward. It's a very visceral thing I feel. I feel nursing as a very embodied art form.

The arts-informed participant self-reflections offered insight into the deeper meaning participants held as nurses facing planetary health challenges. The different expression of artforms and participant self-reflections demonstrated the uniqueness of each nurse in their individual life experience and the power of art to inspire diverse thoughts and feelings.

### **Conclusion**

The reported findings of 14 interviews, six participant observations, and five arts-informed self-reflections presented in this chapter provided a collection of contextually rich data sources from which I analyzed the research questions. These findings developed through repeated cycles of review allowing me to familiarize myself with the data. This analytical step helped me to refine the words provided by participants as the unit of analysis for the development of my coding process.



## Chapter 5: Analysis

I tend to conceive knowledge as something to hold onto, possess, or gain over time. However, the process of interpreting meaning through analysis has reminded me to be open to the layers and multiplicity of meaning within the data. Analysis is the process of shaping meaning into a form to communicate my perspective. My interpretation in this research has been similar to creating a sandcastle that is moulded by my methodology, unique to my researcher perspective, and open to other interpretations of meaning. Anyone can make a sandcastle, and I hope mine encourages people to join and share ideas.

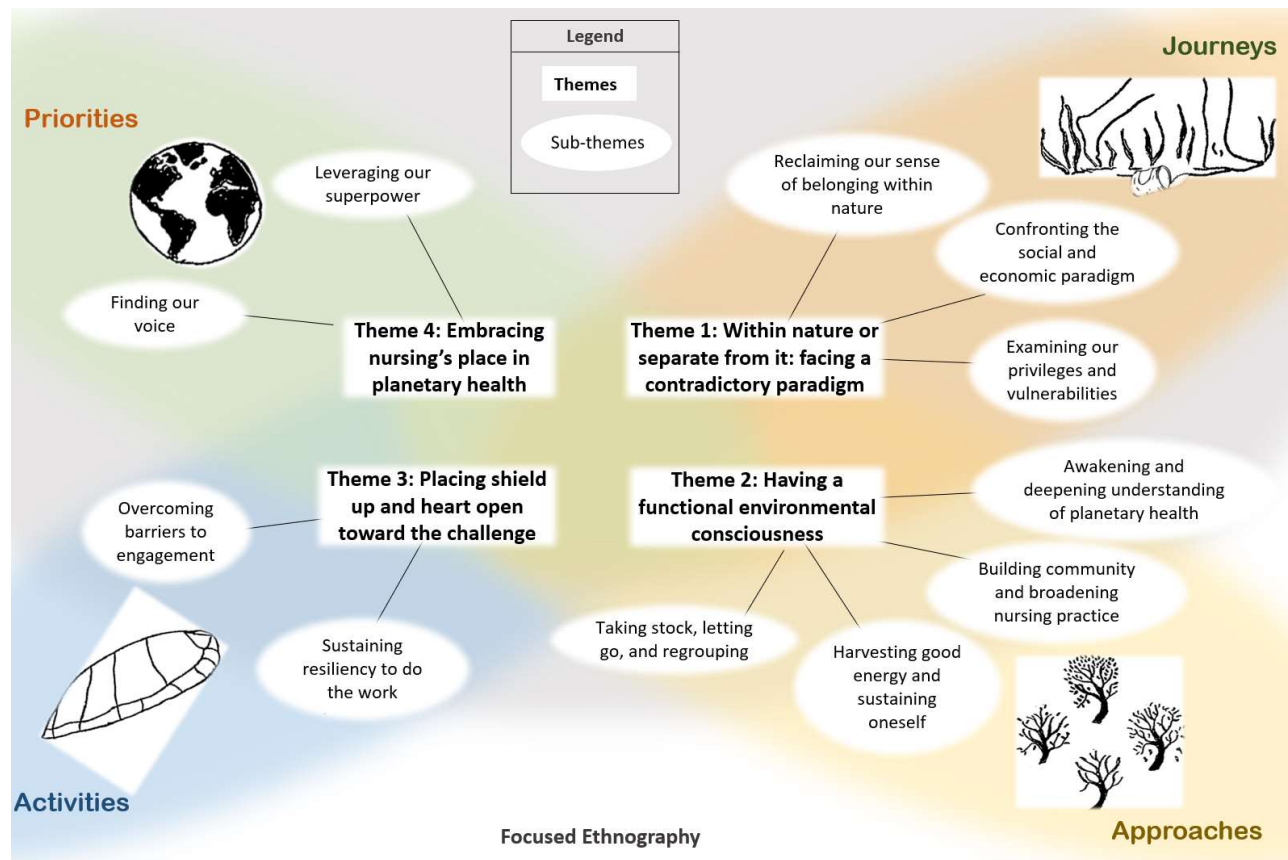
My process for this thematic analysis has been to shape meaning from participant interviews, observations, and artistic reflections into themes and sub-themes using the six phases of Braun and Clarke (2006) as outlined in Chapter 3. With my focused research questions in mind, I began by reviewing the coded data with an emphasis on interpreting the explicit meaning participants shared in relation to their journeys, approaches, activities, and priorities. In the process of defining and naming themes, I grouped coded data with similar meaning into categories of codes. I continued my analysis to generate clear definitions of themes using a non-linear process and revisiting the data to extract implicit meaning at higher levels of generality (Braun and Clarke, 2006; Vaismoradi et al, 2016). As I reread and compared the entire data set of participant transcripts, observation fieldnotes, and arts-informed self-reflections, my interpretations approached a deeper level of abstraction to achieve this thematic analysis. Through this process, I identified four themes and eleven sub-themes. Using phase six of Braun and Clarke's thematic analysis, in this chapter I report on the themes and sub-themes using extracts from the data.

This chapter includes an introduction to each of the main four themes followed by an articulation of the analysis involved and an explanation of their related and contributory sub-themes. Each main theme concludes with an artistic representation and reflection to provide deeper consideration of the layers of meaning. This chapter concludes with a fulsome summary of the thematic analysis involved in my arrival at the four themes, focusing on how it has informed my interpretation of participants' journeys, approaches, activities, and priorities.

My thematic map in Figure 9 illustrates the relation between themes and sub-themes.

**Figure 9:**

*Thematic Map with Themes and Sub-Themes*



The four themes include within nature or separate from it: facing a contradictory paradigm; having a functional environmental consciousness; placing shield up and heart open toward the challenge; and embracing nursing's place in planetary health. Each of the four themes corresponded with data coded and grouped into categories of codes from specific research questions related to participants' journeys, approaches, activities, and priorities with multiple code categories associated with each sub-theme. A data display of themes, sub-themes, categories, and sub-categories identified in interviews, participant observations, and arts-informed participant self-reflections is provided in Appendix 19. This chapter includes an introduction to each theme followed by sub-themes that articulate a particular element of meaning of the theme. Each theme concludes with an artistic representation and reflection to offer further depth of meaning from the multi-faceted nature of the data within this analysis. I provide a summary of this thematic analysis at the end of the chapter to circle back on each theme and how it has informed my interpretation of participants' journeys, approaches, activities, and priorities.

### **Theme 1: Within Nature or Separate From It: Facing a Contradictory Paradigm**

This theme explores how participants reclaimed, confronted, and examined socially constructed ways of viewing the world in order to unpack underlying human impacts on planetary health.

Participants demonstrated connection to nature as a primary value. Often beginning in childhood through relationships with family, influential people, and immersive experiences in wilderness, participants expressed their worldview as being within nature and not separate from it. Labelling it in some instances as the real world, participants also expressed an underlying

tension associated with valuing a paradigm of being within nature while participating in a society that is anthropocentric toward nature. Eric summarized the contradiction of societies that ultimately rely on nature but are disconnected from it:

I just feel we have lost it [connection with nature] as a society in general. We have lost a connection to where our food comes from, where our energy comes from, and how everything happens. So, I think more people need to make those connections to our elements. We've gotten so into the electronics and disconnected from where things are come from ... Why aren't we investing in nature more? I mean that's just going to help society, that's not going to hurt anything, it's going to help release stress and make more people connected to the earth.

The following sub-themes support the articulation of theme one where participants emphasized their sense of belonging within nature, confronted the social and economic paradigm, and examined their privileges and vulnerabilities.

### ***Reclaiming Our Sense of Belonging Within Nature***

I noticed early in my interviews that participants expressed a deep appreciation for nature and the importance of feeling connected to Earth as our home. Sally expressed the interconnectedness of nature as follows:

We are made of nature as human beings and so we actually don't have to go anywhere to connect, we live in it. So that's been a huge influencing factor in my understanding of the natural world and my passion in protecting it as well.

Similarly, in reclaiming a sense of belonging within nature, Mabel exemplified an ethic of belonging first within nature as a conceptual paradigm by saying "my relationship to nature

now is embedded within me and I guess I'm ready to realize the injustice of seeing it otherwise.” Being within nature as a conceptual paradigm informed an ecological justice perspective among participants and their challenge to be their authentic selves amid dominant paradigms that reinforce a false sense among humans of their separation from or dominance over nature.

Participants expressed their authentic selves as people who valued a fundamental sense of belonging within nature and sought to express that value in all aspects of life. Some participants described working to reclaim the deep connection they had experienced during childhood. Other participants commented on their efforts to live authentically as a work in progress, a day-to-day practice to strive for, and a part of their professional identity as nurses. To be true to their authentic selves, several participants changed nursing roles by moving into education, making more time for advocacy or consulting work, doing hands-on community resiliency work, and stepping away from clinical nursing practice. Several frontline nurses involved in direct patient care identified themselves as environmental advocates who happened to be nurses. All participants related challenges to being their authentic selves in the practice of nursing within health care systems.

### ***Confronting the Social and Economic Paradigm***

Participants questioned the status quo and challenged notions of what human impacts are acceptable at the expense of planetary health. While expressing a sense of belonging within nature, participants emphasized justice for all life to exist and have intrinsic value independent of human use. They further expressed an increased sense of injustice for the disproportionate impact on those rendered vulnerable due to planetary health decline. Participants consistently acknowledged social justice around planetary health and recognized that ecological justice to

support life on the planet included addressing the social injustices among humans. Their critical reflections drew particular attention to the underlying inequalities that exist among people and the unsustainable human practices of extraction, consumption, and pollution by a few that impact the many.

Participants were able to speak to specific challenges, such as climate change, yet had difficulty translating how root causes could be addressed through traditional forms of nursing practice. They often mentioned nursing advocacy to address root causes but voiced that advocacy was also considered political engagement and was therefore discouraged for nurses as representatives within health systems. Participants specifically highlighted the conflict between personal values and professional obligations in the context of action that could threaten their nursing registration, such as breaking the law during an environmental protest. Mabel shared:

I feel afraid of getting arrested for personal and professional reasons, as a nurse I have to continue to report if I've been charged with the crime. Sometimes I think that it may be necessary for us to disrupt at that level, I mean 'us' as the population, but I feel like I can't. I can't do that and continue to act in my professional capacity as well.

Participants who sought to align their personal values and professional responsibilities expressed pressure to conform when facing situations where they felt their values conflicted. For example, some participants, such as educators, administrators, or consultants, who appeared to have the most to lose, were cautious in explaining how they navigated advocacy, including the unwritten rules about what they could or could not do. Climate Nurse exemplified this concern in expressing their experience:

We have to be very careful to not alienate anybody or step on any toes. We are very careful in our language and then our work. So, while I'm hearing from the highest levels of the organization that they support climate solutions or climate and health solutions, but when you're going to say the words 'climate change' it has been very difficult, and I still have to tiptoe around that in a way that can be very frustrating.

In some instances, I noticed implicit and explicit effort among participants, particularly those involved in direct patient care, to diminish the emotional burden of trying to live a connected life by lowering their expectations for what they needed to be happy or by applying a level of cognitive dissonance. Charlie spoke of the challenge acknowledging and enacting behavioural change in the context of large issues such as climate change:

We're good at dealing with the emergencies that are obvious and that we can see like a heart attack for instance in healthcare. A flood just happened and a couple of huge bridges have been taken out on the highway and okay, then they'll start working together and put in a new bridge and we're good at that, but there's such a lag time with this slowly creeping along [climate change] course. People in the areas where they were totally affected are aware, but then those of us who haven't seen it, we just put in different excuses or reasons like this [flood] is just a one-off.

For participants who expressed a sense of cognitive dissonance, such self-awareness was not shared lightly. Participants demonstrated depth in their thinking about the challenges and tried to unpack how humanity got here. Heather's comment exemplified how several participants unpacked the root causes of planetary health challenges:

Somehow, we've shifted more to this extractive, harmful economy, but have been able to spin this narrative that it's 'in pursuit of progress.' So, we've defined these imaginary concepts of progress and growth and what is healthy, what is normal, and balanced, and we've have shifted away from what we actually need as humans on the planet to something really dangerous. So, making sense of that for me is thinking about how these narratives really drive how we operate as humans on the planet with one another and with the resources that we have.

### ***Examining our Privileges and Vulnerabilities***

This sub-theme represents the contradiction participants experienced in their awareness of systematic social and economic inequality while recognizing themselves as people with privileges that afforded them certain levels of security made possible in that same social and economic system. Participants expressed vulnerability as nurses in terms of the overwhelming health care demands and the unpredictable nature of climate change. All participants discussed their professional privilege as nurses to be used as a source of empowerment to effect social change. Charlie exemplified an awareness of their privilege and a humble desire to use it to make a difference:

I am one person, I do not have a scope to do everything, but I also have this kind of privilege and powers as a nurse. People sometimes listen to me a little more because of that, and there's an aspect of respect that goes along with it, so I try to use that on some good level ... I have the information and I have resources and maybe I'm the one that sometimes they'll listen to. So just trying to find my spot in the movement and in a way to make it feel like I'm contributing.



Participants shared the process of beginning to confront their own privileges, and some described discomfort in contemplating planetary health challenges from a position of relative safety. They described having choices that many people in their care do not have. They expressed concern that inequality was growing and would be amplified over time due to climate change. Specific privileges included having access to nature, climate-controlled housing, economic security, and geographic mobility. One participant reflected on choosing to work outside her home region in order to remove her children from smoke during the fire season. She described the moral conflict she faced as a parent and as a community nurse, and the stress of making a decision that prioritized her family's needs but left her team short during a critical time.

Most participants contemplated their own privileges and vulnerabilities as they related to unpredictable weather events, global supply chains affecting food security, and a health system overwhelmed by demands similar or worse than during the COVID-19 pandemic. Mabel's reflection considered her own privilege and struggle to live with the contradiction of relying on unsustainable and inequitable social and economic structures for security:

We start to realize how the food that's around us is not the food they were going to have in the future and if we're not able to engage in that, then we're going to be struggling even more ... maybe what the nursing role ends up being is helping people ensure they have access to food and basic security and even White middle-class people like me and imagine what that's going to do for people who don't have all these privileges. It's a place where my mind goes for sure and I think it's an honest route to go, I just kind of push it down a little bit to survive day to day.

Participants like Mabel referred to her sense of relative safety being threatened by the increasing severity of climate change impacts including the potential for social and economic upheaval. Rather than push it down, Mabel in fact turned that sense of threat into action through an unconventional approach to nursing practice:

A lot of my practice is unpaid work, so actually growing food and giving it freely, that is a sustaining practice and it's a liberating practice, separate from the economy that we know today and just giving things freely. I think that is one of the most rewarding things I've become part of, using my hands and my body to help grow some traditional local foods.

Coming to terms with the potential for an unpredictable and potentially difficult future, Mabel was empowered to reimagine her nursing practice as community engagement in a localized economy based on food sharing.

### *Artistic Representation*

#### **Figure 10:**

*Artistic Representation for Within Nature or Separate From It: Facing a Contradictory Paradigm*



As shown in Figure 10 above, I chose bare feet walking in grass as an image metaphor expressing participant connection and comfort within nature. The image expresses a sense of

being grounded by a time and space where participants felt particularly close to nature at a young age. Bare feet also represent my participants' efforts to walk lightly on the earth, to take care of whatever is underfoot, and to be part of nature. The image includes a sharp tin can symbolizing the obvious contradictions participants experience while navigating their journey. The black and white image reflects a lack of colour and visible diversity among nurse participants in this dissertation research. It raises questions about which nurses are or are not engaging in planetary health and what journey perspectives are missing. This metaphor image aims to express the vulnerability and challenge among participants to live what they value while confronting obvious planetary health concerns within an anthropocentric society.

## **Theme 2: Having a Functional Environmental Consciousness**

This theme reflects how planetary health-informed participants apply pragmatic approaches to nursing practice. The theme's title emerged while I spoke to Climate Nurse who exemplified a proactive and practical approach toward planetary health and set limits for herself. She explained "I don't go to extremes, which are wonderful, and I wish I had it in me to do it, but I don't. I live more of a functional environmental consciousness." This theme describes how participants applied their informed understanding and awareness of environmental issues and translated it into meaningful and effective planetary health actions. The following sub-themes are associated with having a functional environmental consciousness: awakening and deepening understanding of planetary health; building community and broadening nursing practice; harvesting good energy and sustaining oneself; and taking stock, letting go, and regrouping.

### ***Awakening and Deepening Understanding of Planetary Health***

Participants described the size and scale of planetary health challenges as something to come to terms with individually and collectively as a society, and that this awakening begins through awareness of the issues. Mabel described the challenges of climate change as complex. She emphasized that partial awareness of multiple issues was limiting action toward the ultimate objective of sustainable human practices to support and maintain planetary health:

Part of that problem is that we isolate climate from other issues, we should be thinking about integrative solutions and integrative approaches, like I said at the core is this cycle of exploitation that is really at the crux of how we've gotten here and if we can have solutions that are embedded our biodiversity crisis, our water crisis and our climate action, I think that will enable us to do so much more.

Mabel and other participants described moving their awareness from the multiple issues of climate change toward a focus on the root causes such as inequality, reliance on fossil fuels, and an anthropocentric social and economic paradigm. They demonstrated motivation to mobilize and amplify nursing toward integrated solutions such as the social determinants of health, advocating for a just transition away from fossil fuels, and supporting community-based food security. Participants consistently expressed the inextricable link between planetary health and human health as a basis of awareness from which nurses could most easily relate and advocate.

### ***Building Community and Broadening Nursing Practice***

Observing nursing environmental group meetings highlighted the value in building a sense of community among planetary health-minded nurses. Participants consistently referred to

their participation in such groups as a gateway to furthering their awareness and knowledge beyond what they could have developed on their own. All groups appreciated the opportunity to unpack ideas, network with returning and new members, and share positive energy and fellowship about some of the most difficult topics. Members demonstrated how such meetings were a practical application of their time and energy for broadening their considerations for what was possible in nursing practice. Many participants referred to regular nursing environmental meetings as a significant motivator for moving their concerns into ideas, gaining insight and strategies for approaching planetary health in concrete ways and supporting environmentally conscious nurses who might question the fit of their nursing career. Charlie shared:

I think [nursing environmental] organizations are great about helping nurses find a way in and where they can help and just affirming their conversation of like... you don't have to change careers or change what you like to do to care about climate issues.

Within such groups I also observed nurses sharing web-based resources such as podcasts that broadened opportunities for them to network and learn from other environmental organizations and perspectives. Sally shared the experience of listening to one such podcast and how it helped broaden her own perspective on planetary health challenges: "I listen very regularly to podcasts that are optimistic in nature like Outrage and Optimism and clean energy podcasts that help me to look forward instead of being in the disappear of things."

Another important aspect of building community and broadening nursing practice that participants shared was being involved in hands-on-earth community-based activities. At times these activities were described as opportunities to get away from nursing and be physically active in community gardening, tree planting, or environmental restoration work. AJ's use of

prescribing nature demonstrated how participants broadened their nursing practice by incorporating alternative nature-based treatments into community health, environmental health, and conversations about sustainability. This is a further example of participants applying integrative solutions to upstream problems like climate change. Participant examples of community building were often referred to as grassroot level and in many cases involved volunteering time.

### ***Harvesting Good Energy and Sustaining Oneself***

Participants conveyed a deep appreciation for Earth as a life-sustaining entity that they were part of and that energized them. At the start of meetings, the groups I observed often acknowledged an appreciation of the land and recognized local Indigenous people. Participants were actively involved in nature and hands-on-earth environmental activities such as planting trees and growing food. These activities were both rewarding and sustained their energy. Participants also referred to opportunities for nurses to connect nature with healing through programs such as the PaRx nature prescription program (BC Parks Foundation, n.d.) and the potential for an ecological focus that could transform the health care system. Jen's reflection on her poem is a good example of how participants focused their energy on sustaining their engagement in planetary health activities:

I just generally have a pretty dreary disposition and I look for the good things, and that's what's coming out in this [poem], is that despite the major issues we have, at the end of the day, what's happening on this third rock from the sun is still overwhelmingly mysterious and beautiful and interconnected.

Participants were not naive to planetary health challenges, but their awareness did not reduce their ability to function. Heather explained her approach as “I have lowered my threshold for joy because I think that makes me more of a joyful person, or allowed me to be more joyful, and most of that comes from nature.” Heather’s comments are representative of how participants were focused on what they could do and how being connected within nature was a source of energy to sustain and celebrate what is possible in their approach to planetary health activities.

### ***Taking Stock, Letting Go, and Regrouping***

Participants and observed groups shared an overarching interest in collaborating with other nurses and health care professionals and welcoming new participants to get involved. I also noticed important moments in which participants reflected on their activities in ways that took stock of what was working and what was not. Several groups shared running agendas that grew with new ideas at each meeting. Participants shared moments of critical reflection by asking themselves or others in a group to take stock of their activities as a form of consolidation of purpose. In some instances, participants adjusted their expectations, reset their priorities, and let activities go in order to embrace new ones. Participants described the importance of regrouping and regaining perspective on what was important to them. These reflections often included considerations for family and the energy and time required to effectively engage in planetary health activities. Participants also shared instances where they had to heal and step back from activities such as graduate studies, full-time work, and frontline nursing.

## *Artistic Representation*

### **Figure 11:**

#### *Artistic Representation for Having a Functional Environmental Consciousness*



Figure 11 is an artistic representation for the theme having a functional environmental consciousness. Trees are an integral part of a forest and are representative of the four seasons through their changing appearance and functions. The image of four trees in different seasons aims to reflect the sub-themes of having a functional environmental consciousness in four interrelated ways. Spring represents an awakening and the importance of focusing on the root of issues to nourish understanding. Ideas, like new leaves, are developed and shared among groups of like-minded nurses. Building community and broadening what is possible is fitting for how a summer tree points its leaves in the most efficient direction of the sun and grows what it can. Harvesting good energy and sustaining oneself is like the fall tree bearing fruit. Fall colours also celebrate the success of good growth and show their appreciation for the land as the leaves return to nourish the soil. Finally, while the winter tree is dormant, it is taking stock of its resources, letting go of dead branches, and conserving energy to recharge the roots for spring.



### **Theme 3: Placing Shield Up and Heart Open Toward the Challenge**

Placing shield up and heart open toward the challenge is a theme that acknowledges the strength participants demonstrated as self-aware individuals who are savvy and able to protect themselves while approaching planetary health activities in a caring, thoughtful, and meaningful way.

The words for this theme stood out from a comment shared by Eric, a full-time intensive care nurse who was also actively involved in advocating for health system policy changes within his workplace and at a regional level. He said, “I use an example of the warrior who’s got a shield up, but his heart is open. You have to protect yourself and yet you have to open yourself to be vulnerable.” Eric’s reference to a shield and heart provoked consideration for how participants demonstrated perseverance to advocate for planetary health, sometimes under difficult personal and professional circumstances, while offering kindness and empathy toward others in their approach.

Giving way to this theme, I identified two sub-themes from the data that explore how participants sustain resiliency and overcome barriers to effectively engage in planetary health.

#### ***Sustaining Resiliency to do the Work***

Resiliency is the process and outcome of being able to successfully adapt to changing or difficult circumstances in life (American Psychological Association, n.d.). Participants demonstrated an ability to be actively involved in challenging planetary health topics over periods of time and in some cases throughout their career. In most cases, participants were volunteers in groups with marginal access to financial resources. Some described facing aspects of adversity in their work reflecting a resiliency within them to continue. Resiliency was

expressed among participants by demonstrating how many did not shy away from challenging issues or spend time dwelling on them in despair or frustration. What came through was a sense of sustained resiliency from seeing challenges of planetary health and choosing to be actively involved. Climate Nurse shared:

For me is not a matter of what I believe it's just a matter of facts. I mean we are moving in a direction that is unsustainable, there's no play on words there. We have to stop this and we have to change the way that we operate. We cannot continue the way that we're doing things it's just plain, we just can't. So that is my foundation and my basis of it.

Within their awareness of planetary health issues, participants expressed resilience by thinking about and framing planetary health issues in tangible ways for nursing practice. Charlie exemplified this in saying:

With the doomsday framework we can look at the big numbers and that's scary, but also, we are going to see it at some regard and be like ok, how are we going to get through this? And how are we going to deal with it like a day-to-day thing, so it's kind of what I think of.

Participants described challenging circumstances such as standing out in their health team and being labelled or judged by others in conversation regarding planetary health issues. They described feeling averse to facing criticism, engaging in debate, or being scrutinized about their knowledge and intentions as representatives of environmental issues. Eric exemplified these challenges among participants when he explained the strain on his emotional energy to advocate for planetary health:

It's tough when you get shot down after a while. You can only take so many, 'okay, ya we've listened to him, but we are pushing that aside'... [or] 'here comes the guy who's got all the ideas, but they're expensive, they're radical, they're not how we do things.'

Eric's priority of planetary health considerations exposed him to increased scrutiny among decision makers. Participants risked being labelled and ostracized for their environmental advocacy. Eric resisted the strain and temptation to back down and remained open and resilient to the challenge of sharing his perspective as a nurse to inform different administrative layers of the health system. He said:

I mean in some ways I am going around them [administrators]. If you don't want to make these decisions, I am going to help you make them [e.g., among executive directors and regional health officials], because we need to start doing, we need to start incenting the right things more.

Participants described a sense of urgency for action on climate change and pressure trying to keep up with multiple environmental concerns. In this regard, Mabel described the challenges of carrying nursing and planetary health knowledge and applying it to meaningful action:

Every day it looks like 'this is so important' then 'this is so important' and I feel so guilty or I'm minimizing the importance of these things...we easily get pulled in all different directions and is difficult focusing in on what is a huge crisis that's unfolding.

Despite these pressures, participants resisted being pulled in multiple directions and thereby sustained their resilience by reflecting on their priorities and carefully considering commitments that competed with their available time and energy. For several participants this meant holding back from larger planetary health activities due to other priorities such as personal

wellness, family and child obligations, graduate school commitments, risk to employability, stress avoidance, and maintaining control. Conversely, retired or almost retired participants, like Anne and RJ, described being more involved than ever and enjoying this stage of life with fewer competing commitments. They reflected a sense of empowerment which I suggest informed their resiliency for planetary health work by making this time in their life about advocating from a position of experience and wisdom. In order to sustain their resiliency to do the work, many participants took a pragmatic approach to valuing more from less, such as what Heather described as “garner meaning out of smaller interactions.” This enabled participants to have more control over less daunting commitments.

Climate Nurse shared the kind of rapport nurses can have with one another when a leader in planetary health is among them. She exemplified resiliency by persisting among administrators to create her own role in sustainability within the health system. Over time in this role, she approached frontline nurses as a nurse to get buy-in and share a passion for the importance of new environmental policies. These policies were more likely to be sustained among nurses with this approach. She shared:

If you come on to a nursing unit and ask them to recalibrate the way they do things and start tinkering with their workflow, if you can say to them, ‘I’m an RN, I have experience, I have walked in your shoes I still walk in your shoes, I respect your work flow, I understand your workflow, and I still need your help right? I mean as RN to RN, I need you engaged in this work,’ it helps. There’s a brotherhood and sisterhood within nursing that you just can’t ever take, I mean as long as you have that, you get it and that’s been really helpful.

Building that sense of brotherhood and sisterhood among nurses that Climate Nurse described is an important consideration for sustaining resiliency during times of need.

Participants consistently shared comments that the work of nursing was difficult and particularly challenging during the COVID-19 pandemic. The fact that participants volunteered to join this study during the pandemic reflects their resilience to express their work even during a time of adversity. In this light, the rapport shared among nurses is that they *get it*, that the work is tough but rewarding. An historical example of resilience was inferred when a participant compared communicating the urgency of the planetary health crisis to the time when nurses were called to act during war.

Many participants struggled with the pros and cons of putting themselves *out there* into broader public conversations about planetary health. There was hesitancy among participants to be in the public eye and expose themselves to political debate, media scrutiny, or unfavourable public commentary through social media. These concerns relate to participants' ability to sustain their resiliency, particularly when trying to communicate within higher levels of public engagement. Betsy comments relayed this concern:

You have to walk gracefully when you discuss the term climate change, to the point during my PhD program, I had to really think it through if the term was necessary when I was talking about it because if I could avoid talking about it [climate change] in some discussions, then I wouldn't shut some people down. I think that term is connected with a lot of philosophies on life and government. So, I just want to make sure nurses are staying with the health focus, that's why this is so important, but it's like you're dragging that political chain with you when you are diving into the realm of climate.

Similarly, participants demonstrated resilience to carry on when the urgency of planetary health concerns challenged the perceptions of friends and family members in conversations.

Betsy shared the following experience:

It's a bit scary because people don't want to talk about climate change and ecological crisis is not a light fluffy conversation. So, it can be a bit scary, but I think it's important to push through the discomfort and talk about it so we can face it head on.

Participants demonstrated capacities such as self-awareness, flexibility, and inclusivity of perspectives that informed what I consider to be resiliency for their active involvement in planetary health initiatives and community conversations.

### ***Overcoming Barriers to Engagement***

While participants identified significant personal, social, and structural barriers to activities or opportunities for planetary health engagement, as outlined in Chapter 4, this sub-theme represents the opportunities that participants demonstrated to overcome barriers to engagement such as gaps in ecological knowledge, a lack of educational curriculum, a disconnect between human and planetary health, and difficulty among nurses addressing upstream planetary health issues.

Participants involved in nursing curriculum, like Hannah and Betsy, actively sought to close the ecological knowledge gap by building on a growing awareness they had noticed among colleagues in education. They were developing educational modules and strategies to inspire teachers and students to broaden their thinking about nursing within an ecological paradigm. Participants in the role of educators, consultants, guest speakers, and mentors were educating pre-service, graduate, and practising nurses to unpack planetary health as an overarching

determinant of human health in nursing education. As a graduate student, Hannah exemplified overcoming educational barriers through a persistent effort and focus on developing nursing curriculum:

I feel I've been successful so far; we've got it [climate change] already into two graduate classes and in three undergrad classes. We're working to push for more and more and to have this continue after I leave, so that is success. Having people listen and change is kind of addictive and so I want to see more change happen and so I am thinking bigger and bigger.

Many participants related planetary health to fundamental social justice dimensions of nursing education and the pressing need to extend curriculum on nursing advocacy regarding ecological justice. They highlighted social inequality as a central issue for addressing climate change and many participants included the right to life of all living species through biodiversity protection.

Throughout my research, I noticed participants acknowledged the seamless interconnection between human health and healing and planetary health and healing. They referred to being mindful of the socio-political underpinnings within climate change discussions and cited health as a different angle through which nurses could make connections in the current political landscape of polarized opinions. Hannah described her awareness of connecting human and planetary health, "I saw this coming together that nurses as a collective, could effect change on this policy-wide and also in the public on understanding what climate change really means for health." Nurses sharing a planetary health perspective and connecting it to human health was

seen among participants as a way that could deescalate charged political conversations and overcome obstacles to engagement.

Similarly, participants emphasized that addressing upstream issues required attention not only on people who agreed with them, but also larger audiences of people who may have different viewpoints. They acknowledged the struggle of not losing connection with people who do not agree with them. Eric described this point in detail:

That's where the change has to happen, have to meet the voices that may not always agree with you. You may have to approach them and I'm not going to get everything I want, I know that, but at least I can move the conversation forward and it's exciting when you do more that conversation forward.

Participants strategized how to connect and build bridges between differing opinions in ways that did not alienate people or provoke fear. For example, several participants mentioned the need to support people in carbon intensive services and industries who are at risk of losing their jobs if there is not a just transition to sustainable practices. Anne Rodgers commented how these conversations can be uncomfortable and mean "you get pushed to your edge" but rather than allowing the discomfort to be a barrier to engagement, nurses have important stories that can connect to a broader audience.



## *Artistic Representation*

### **Figure 12:**

#### *Artistic Representation for Shield Up and Heart Open Toward the Challenge*



The metaphor for placing shield up and heart open toward the challenge is represented in Figure 12 by a turtle shell positioned upward. This positioning represents participant vulnerability and boldness toward planetary health challenges. Contrary to the shield of a warrior, the shell represents a protective measure without an expression of reciprocal violence. While most participants demonstrated a conviction for their values and beliefs about planetary health, I did not witness harmful or threatening approaches in the group observations nor in the reflections provided by the participants.

The shell also represents the burden that participants carry in their work. Anne described climate change as “being this huge umbrella over everything.” Anne Rodgers brought this burden into focus when she stated, “we are already in a pandemic and stuff is tense, so you are watching the whole world be under this tension of climate events.” Reflecting on Bluebird’s experience of going to the island, the shell represents a safe retreat that some participants needed to take care of themselves and their families. They used their own spaces to regroup in order to move forward in their work. With the heavy burden of their knowledge, participants preserved themselves by boldly facing in, not turning away from planetary health challenges.

#### **Theme 4: Embracing Nursing's Place in Planetary Health**

Throughout the nursing profession, participants noticed increased receptiveness to conversations about planetary health as well as calls for action. This embracing of nursing's place in planetary health is a theme that expresses how participants envisioned themselves in the nursing profession as part of a growing movement among health care professionals concerned with the health impacts of climate change. Participants recognized the global tension of climate-related events and the need to take urgent action to mitigate and adapt to the impacts of climate change in order to protect public health. They also reflected on the COVID-19 pandemic as an early reckoning for future climate change impacts and how nurses will once again be affected. The pandemic highlighted for participants how structural inequalities resulted in certain populations facing higher risk to virus exposure and how governments demonstrated capacity for major change in response to a global health threat. Finally, this theme articulates the awareness participants have about their unique knowledge, experience, and social position as nurses to make a difference in support of planetary health. The related sub-themes focus on participants finding their voice and leveraging their superpower as nurses facing planetary health challenges.

##### ***Finding our Voice***

Finding our voice is about participants envisioning the capacity of nurses to influence planetary health advocacy and lead social change at an important moment in human history. Participants discussed redefining what nursing practice is in relation to planetary health and how to use their position and voice to effectively express their values within the health care system, their local community, and society in general.

Participants demonstrated confidence in their knowledge that human health is planetary health and therefore very relevant to nursing practice. In finding and using their nursing voice, they connected with people to share their message in clear, meaningful, and non-threatening ways. Participants shared a common understanding that access to health services should be universal and that decline in planetary health corresponded to an overarching mandate for the nursing profession to focus on climate action as an investment in future health outcomes. They described the potential of focused action by nurses due to their large numbers, social position, and integration into local communities around the world. Hannah described in detail what she saw as large numbers of health care professionals who could be mobilized to have their voices heard:

I see the vision to be all health care professions speaking one voice about climate change and to educate the public about the health risks and to help not only prevent the worst damage from happening, but also to mitigate the damage that's already here and will continue to happen. So, helping the public to adapt to a new world where their home may not be safe for their children, we need to prepare to deal with these issues. That's how I think nursing and health professions fit into this.

### ***Leveraging our Superpower***

Leveraging our superpower is a sub-theme title that was adapted from Anne Rodgers who spoke at an environmental group strategy session that I observed about nursing engagement in planetary health. She said, “your superpower as health care professionals is your reputation, so leverage that. That's what you can bring to the movement.” Anne further highlighted:

It's not because of who you are individually, it's because you are a nurse that you get this respect and credibility from the public and, wow, this is an amazing opportunity. We need to really take that responsibility to use that as leverage. All kinds of people have to work really hard to get that and we already have it just by way of our profession so it's a great opportunity to be able to do things with.

She also expressed how nursing's reputation as a superpower became a catalyst for how her group embraced their role in planetary health engagement:

How do we just ripple this out to get more people talking about it and what is that impact from a prospective of patient or client to hear a doctor or nurse talking about climate change? Does that hit them a little bit differently from hearing about it in the news, or hearing from other places? So that underpins our strategy in how to get our voice out.

The planetary health perspective of participants combined with their highly respected nursing status is a superpower that is particularly impactful when demonstrated among participants such as RJ:

I am respected as a nurse and when I'm approached in my community, I am very proud that I am a nurse in my synagogue. I have gained environmental credibility from the time I cared for them when they were pregnant and had their babies...During breastfeeding week, not long ago, they asked me to make a statement because they decided to have an environmental focus for that week. It was great. I could state that breast is best and then talk about no waste with breastmilk, and perfect temperature with breastmilk and from an environmental point of view.

Through many years of experience in her community, RJ has had a multi-generational impact on planetary health advocacy. RJ and several other participants demonstrated the value in community-based nursing and using their voice to advocate for planetary health from an everyday nursing practice perspective.

Participants themselves reached out to be part of this research project and share who they are and what they do. Each person was embedded in their community and expressed their nursing practice in a different way. I have been inspired by each person for how they value planetary health within their individual habits and choices. Anne reflected on the concept of a “climate shadow” and how she identified collective individual actions within a bigger picture:

It’s about what you drive, where you work, where you spent your money, how do you invest your money, but it’s also about how do you talk about it [your climate shadow], how do you think about it on a daily basis, how do you bring attention to the subject and instead of other things that are difficult to account for. I just found the climate shadow really inspirational because I feel what I’m doing has more value.

These research participant voices corresponded with actions that are powerful examples of daily efforts to value planetary health. Participants did not express their thinking or actions toward a movement in “group think” within the nursing profession. However, collectively participants had a significant local, regional, and national impact. They envisioned the potential for nurses around the world to voice and mobilize concern for planetary health.

## *Artistic Representation*

### **Figure 13:**

#### *Artistic Representation for Embracing Nursing's Place in Planetary Health*

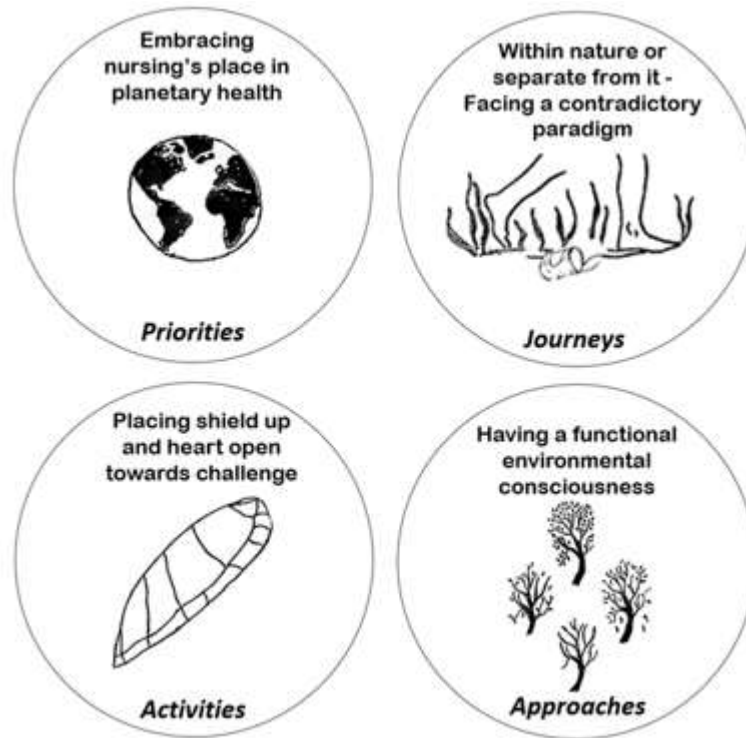


Earth as viewed from space in Figure 13 represents the clarity with which participants saw planetary health as fundamental to the existence of life. Participants felt what Mabel stated for nurses to consider “responsibility beyond caring for people as though they are separate and make that broader connection to our responsibility to protect and nurture what nurtures us.” The singularity of Earth’s image shows that understanding human health as planetary health could be a unifying social message communicated by nurses around the globe. It could also be transformative through nursing practice. Earth as a whole is a symbol of participants’ sense of belonging within a global community at a moment in time where individual and collective action is needed the most.

## Theme Summary

**Figure 14:**

*Artistic Representation for Theme Summary*



Each of the themes shown above in Figure 14 represents my interpreted analysis of characteristics within a focused ethnographic study exploring participants' journeys, approaches, activities, and priorities as nurses engaged in planetary health. The characteristics of each theme are my interpretations of meaning within a rich data set of participant interviews, observations, and arts-informed self-reflections. Refining, defining, and naming themes was an iterative process of exploring the data and using art to express further depth of interpreted meaning.

The theme within nature or separate from it: facing a contradictory paradigm describes a connection among participants within nature, a bond often formed in childhood, yet experienced in contradiction to an anthropocentric paradigm of human separation from nature, a superiority to

nature, and the exploitation of nature. The characteristics of this theme express the journeys of participants to reclaim their connectedness of a shared humanity within nature, to reconcile their personal values and nursing identity, and to examine socially and economically unsustainable human practices that privilege some at the expense of many.

Having a functional environmental consciousness summarizes how participants' awareness and understanding of planetary health informed their perception of the challenges, how they thoughtfully engaged others, and how they used proactive and practical approaches toward activities. Community engagement, developing and facilitating best practices, celebrating success, and preparing for the future were all functional attributes of participants' approaches to planetary health and represented a broadening of nursing practice to engage in tangible ways.

Shield up and heart open toward the challenge acknowledges the strength and resilience of the participants to engage in planetary health activities while maintaining their capacity for kindness at the centre of their sustained efforts. Participants chose on their own terms to do what they could in meaningful ways. Participants positioned their activities within the challenge of overcoming barriers to effective engagement in planetary health.

The theme embracing nursing's place in planetary health describes participants' collective potential in expressing nursing's unique voice and social position to make a difference in planetary health. Participants embraced the priority for urgent action to mitigate and adapt to climate change in order to protect the health and welfare of those who are rendered most vulnerable (human and more-than-human) and for future generations. Participants saw themselves as part of a growing movement among nurses in communities around the world



where planetary health awareness is translating concern into action once nurses are empowered to get involved.

## **Conclusion**

In this chapter I introduced and analyzed each of the main four themes and their sub-themes. Each theme concluded with an artistic representation and reflection that provided deeper consideration for the layers of meaning in my research. I closed the chapter with a fulsome summary of the thematic analysis involved in my arrival at the four themes, focusing on how it informed my interpretation of participants' journeys, approaches, activities, and priorities in relation to planetary health.

## **Chapter 6: Discussion, Implications, and Recommendations**

Nursing literature has shown that nurses are increasingly aware that the devastation of Earth's systems are impacting human and more-than-human populations around the world (Catton, 2023; Chaiard & Turale, 2022; Cubelo, 2023). Furthermore, nurses recognize that climate change and environmental degradation resulting in air, water, and soil pollution, heat-related illnesses, vector-borne diseases, and mental health issues, are directly related to human health and welfare (Kalogirou et al., 2021; Kameg, 2020; Lilienfeld et al., 2018). Nurses care for the people who are rendered vulnerable due to planetary health decline as average global temperatures only continue to rise (Kalogirou et al., 2020a). In fact, nurses hold an important social role associated with caring that includes providing emotional support, education, advocacy, and coordinating patient care for the health and welfare of people around the world (Beck & Dossey, 2019; Cubelo, 2023; Falk-Rafael, 2005; Watson, 2020). By decentring an anthropocentric understanding of the world, nurse scholars seek to inform a holistic, ecological perspective within the nursing profession that acknowledges and values the agency and interconnectivity of all life forms and elements of nature (Dillard-Wright et al., 2020; Howes & Warwick, 2023; LeClair et al., 2021).

Within the context just described, I presented my research findings and analysis in the last two chapters to show how participants engaged in planetary health experienced their journeys, what approaches they took, which activities they were involved with, and what priorities they saw as important for the nursing profession. Additionally, these chapters reported how nurses participated within environmental organizations and how they viewed themselves and their planetary health work through artistic expression and personal reflection.

In this chapter, I provide a broad yet comprehensive discussion focusing on each of the four themes and their sub-themes to highlight the meaning of study results within current literature. An artistic reflection is offered as an embodiment of analytic themes among participants. I then apply critical caring theory to relate my analytical themes to the seven carative health-promotion processes described by Falk-Rafael (2005). Next, I provide implications and recommendations for nursing practice, policy, education, and research. Finally, I end this chapter with the study's limitations and a conclusion.

## **Discussion**

### ***Theme 1: Within Nature or Separate From It: Facing a Contradictory Paradigm***



Rather than attempting to define what it means to exist in nature or separate from it, this theme is situated in the underlying irritation, angst, and frustration participants expressed in reconciling their sense of connection to nature while living and working within an anthropocentric society. Furthermore, this theme identifies the inherent contradiction participants faced while prioritizing sustainability in societies with unsustainable social and economic systems. Participants acknowledged what Brigham (2021) referred to as the important work required to centre human interconnection within nature, rather than prioritizing humans at the expense of planetary health. In this study, participants did this by reclaiming their sense of

belonging in nature, confronting the social and economic paradigms, and examining their privileges and vulnerabilities.

**Reclaiming our Sense of Belonging Within Nature.** This sub-theme stood out for the effort participants demonstrated to live and work in ways that were authentic to valuing their sense of belonging within nature. In particular, participants expressed concern about their ability to be ethically responsive to planetary health within their nursing practice. They raised ethical concerns around respect for all life forms, the sustainability of health care practices, and their own environmental impacts. By expressing ethical concern for nature, participants related to what Rosa and Upvall (2019) described as “ethical nursing practice” and a “recommitment to health at the planetary level” (p. 169). This sub-theme also relates to how participants actively maintained or reclaimed their sense of belonging within nature, which subsequently influenced their daily practice and, in many cases, shaped their career choices and goals.

Participants shared their specific connections to nature through stories and art, similar to the “earth systems journeys” discussed by Brigham (2021) who used both art and curriculum to educate people about integrating with nature (p. 269). Brigham’s work highlighted the relevance of arts-informed participant self-reflections as aesthetic knowing. This concept has been shared in nursing literature as a way for nurses to express their feelings toward nature connection and to convey meaning to inspire others (Brigham, 2021; Chinn & Falk-Rafael, 2018; LeClair, 2021). I was initially concerned how I would operationalize the arts-informed participant self-reflections of this research remotely but was surprised when participants shared images and poems they had already created prior to the study. The participants had clearly found value and meaning through this medium. Like Kerr and Demorest’s (2021) finding that deep meaning could be conveyed

through art, my participants also reflected an intrinsic connection through art and used it to express their sense of belonging within nature.

Creating opportunities for nature immersion has been described in the literature as a way to destress and influence sustainability conversations and behaviour (Cupelli et al., 2021; Hansen-Ketchum et al., 2009; Howes et al., 2023). My participants valued immersive experiences in nature, which points to how sensory enriching experiences may help nurses reclaim a sense of belonging within nature. Cupellie (2021) referred to seeds of knowledge “from the ground up” (p. 260), suggesting nature immersion as a relevant educational experience for undergraduate and practising nurses. Through activities such as food production and the PaRx nature prescription program (BC Parks Foundation, n.d.), participants sought opportunities to connect with the land and made them part of their nursing practice. These activities were beneficial in supporting the well-being of people, nurses, and the communities in which they lived. The social prescribing of nature immersion and nature-based health promotion represented a shift in focus toward non-medical treatments (Hansen-Ketchum et al., 2009; Hogan, 2023; Napierala et al., 2022). Through efforts to reclaim a sense of connection to nature in nursing practice, participants demonstrated that planetary health awareness can help shift the focus of health care from what LeClair (2021) described as hierarchical and anthropocentric, toward the underlying interdependence of humans within planetary ecosystems (Brigham, 2021).

**Confronting the Social and Economic Paradigm.** In this sub-theme participants saw injustice toward those rendered most vulnerable to environmental changes and described the need to take a stand against unsustainable social and economic practices that perpetuate planetary health challenges. Participants demonstrated what Kalogirou et al. (2020b) referred to

as taking “a strong adaptive positioning” (p. 6) by questioning their own positionality within a social and economic paradigm and making choices to live holistically and connected among people within their community. In this way, a planetary health perspective reflected a robust sense of interdependence with community, inclusive of the needs of other people and nature itself (Kalogirou et al., 2020b).

Participants who questioned social and economic systems sought ways to be authentic to their values by engaging in alternative community-centred social and economic systems, such as food sharing, distribution of second-hand goods, and community exchange for goods and services. Participants of this study held the same belief as Howes and Warwick (2023) who stated that nature should not be used as an endless provider of resources and generator of commodified goods. By encouraging community access to less resource-intensive foods, participants supported what Drake et al. (2021) referred to as nurses’ critical role in supporting food security and healthy food production systems.

Participants often described planetary health activities and nature-based health promotion as unpaid work done by community volunteers or members of nursing interest groups. I noticed a similar frustration that the work and activities participants wanted to do was not economically viable and that nursing environmental interest groups lacked funding to grow beyond the individual commitment of volunteers. Howes and Warwick (2023) stated that when “nature is economically invisible, it is disregarded” (p. 10). I draw a parallel to participants who provided unpaid nursing services such as nature-based healing and planetary health work. In many cases this economically invisible work was not even recognized as nursing, when compared to

normative health care practices, and therefore risked being marginalized or ignored (Howes & Warwick, 2023; Kleffel, 1991a).

To confront what they saw as the social and economic drivers behind the climate crisis, participants often turned to localized community engagement activities. The parish nursing framework, for example, offers a relevant comparison to reimagine planetary health within community-based nursing practice. Parish nursing is described as a localized nursing practice where individuals, families, and groups maintain a holistic community-based reciprocal care approach (Bergquist & King, 1994). Similar to Teheraini et al. (2021) who situated holistic health care practices within a local community context through interdependent and reciprocal relationships among health care providers and educators, nursing that includes planetary health is also grounded in this kind of reciprocal interdependence.

**Examining our Privileges and Vulnerabilities.** Participants critically examined their own personal and professional advantages within anthropocentric social and economic structures that impact the sustainability of the planet. Many participants, for example, identified their advantage as White university-educated women with the choice of regular employment as registered nurses. This sub-theme explores the tension expressed by participants in recognizing that access to social and economic resources that others do not have can be a source of guilt but also fear for what they stand to lose. Participants shared the view, acknowledged by nursing scholars, that anthropocentric social and economic structures predominantly benefit a small minority, rather than the majority, and this awareness, along with a sense of responsibility, is a crucial step in promoting social equality (Dillard-Wright et al., 2020; Howes & Warwick, 2023, LeClair et al., 2021). Participants also recognized their own vulnerability to the disruptions of

unmitigated climate change. Given the time pressure, they felt that more nurses should understand the relevancy of climate action in relation to social and environmental justice—a sentiment also expressed by Howes and Warwick (2023). Participants further recognized their vulnerability to being overwhelmed trying to navigate complex systemic inequalities. In many cases, they made conscious choices to be inclusive of others and use their time, energy, and privilege to focus on practical planetary health actions. Many participants decentred themselves as nurses from normative social and economic practices to make room for other ways of knowing and sharing within their community (Dillard-Wright et al., 2020).

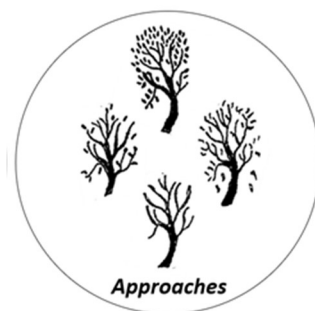
Participants demonstrated that questioning their privileges and vulnerabilities was a step toward deconstructing patterns of oppression in their thoughts and actions. Critical discourse in nursing calls on the nursing profession to deliver just, equitable, and sustainable nursing practices while questioning the latent anthropocentric, gendered, and colonialist thinking that has continued to be emphasized within nursing (Dillard-Wright et al., 2020; Howes & Warwick, 2023; LeClair et al., 2021; Potter, 2022). The post-human critique of nursing by Dillard-Wright et al. (2020) poignantly asked “have we ever been nurses?” (p. 142), echoing my participants questions around nursing identity in general. In thinking about what a nurse truly is, or should be, Dillard-Wright’s provocative question also captured the participants’ questioning of their own positionality within normative privileges that centred White settlers on colonized land and gave nurses choices that enabled them to be less directly impacted by climate change. In the literature, researchers who aimed to deconstruct and disrupt patterns of oppression within nursing were often informed by influences such as racism, colonialism, institutional hierarchies of westernized medical thinking, and gendered violence toward women (Cipriano et al., 2021; Dillard-Wright et



al., 2020; LeClair et al., 2021; and Potter, 2022). I observed an awareness among participants and nursing environmental groups to question patterns of dominance within society and to use their position of influence as nurses to support and advocate for social and environmental justice.

This advocacy was also demonstrated in participants' artistic expressions. Charlie, for example, used artistic expression to examine their privilege and expose their vulnerability in advocating for social justice on behalf of people experiencing homelessness. By choosing to take and modify a political candidate's sign, they were engaging in an act of civil disobedience that could have led to charges of theft, vandalism, trespassing, and possible interference in an election. In so doing, Charlie also revealed the vulnerability of their privileged position as a nurse by choosing this form of advocacy. Florell (2020) related to this type of nursing activism as being "present at the sharp end of the spear" (p. 139) where difficult work occurs. Charlie's artistic expression stood out as a powerful example of nursing activism that risked negative consequences in order to disrupt the status quo. Most participants, however, were not willing to break laws and risk compromising their position as nurses.

### ***Theme 2: Having a Functional Environmental Consciousness***



This theme describes the functional or practical approaches participants used to move from awareness to action in planetary health engagement. In particular, participants were

effective in demonstrating practical approaches that functioned to promote environmental awareness and understanding. Chairard and Turale (2022) acknowledged that climate change as a health and social emergency is now mainstream news and denying that there is a problem is no longer an option. Although participants appreciated the public momentum, they understood that the urgency of climate science warnings risked alienating people by inducing feelings of fear, helplessness, and pessimism (Rasmussen, 2023). Rather than assuming environmental apathy or disregard for planetary health, my study's participants did not dwell on the anxiety-producing aspects of planetary health challenges. They demonstrated a functional approach by mobilizing their capacities to get involved in activities such as building sustainable practices into daily activities, collaborating with others, doing hands-on environmental restoration work, and appreciating the power and beauty of nature. Similar to a study by Lincoln (2000) who examined the lived experience of eco-spiritual consciousness among a select group of nurses, this theme outlines specific characteristics for how participants' conscious awareness of environmental challenges translated into functional approaches to planetary health activities. These are expressed in the four sub-themes: awakening and deepening understanding of planetary health; building community and broadening nursing practice; harvesting good energy and sustaining oneself; and taking stock, letting go, and regrouping.

**Awakening and Deepening Understanding of Planetary Health.** Awakening in this sub-theme corresponds with what Florell (2020) described as “lightbulb events” (p. 136) where nurses became aware of causes, such as threats to planetary health, that moved or changed their perceptions to inspire action. Florell also referred to a “natural progression from awakening to

activism and prioritization of solutions and systems approaches to increase sustainability” (p. 136).

Participants recounted how their earliest awareness of challenges, such as environmental pollution or waste, sparked them to act at a young age. Such environmental behaviours continued when they became nurses and experienced waste in health care settings. Kallio et al (2020) noted that most nurses acknowledged hospital waste as an environmental burden that they experience in their practice. Many participants pointed to their awareness of hospital waste and pollution as a catalyst for becoming more involved in planetary health activities and locating communities of practice among like-minded nurses.

Referring to the COVID-19 pandemic as a wake-up call, participants pointed to a massive increase in personal protective gear pollution worldwide, how more-than-humans were being impacted, and how zoonotic diseases were expected to rise as human-animal encounters increase. Consistent with the findings of Chaiard and Turale (2022) and Martin et al (2023), participants witnessed that social and economic differences among people impacted their exposure risk to COVID-19. They saw the pandemic as an opportunity to generate greater awareness and a deeper understanding of the social and economic inequities that exist within society and the need for social change (Booth et al., 2020; Chaiard & Turale, 2022; Jackson et al., 2020; Martin et al., 2023; Schenk et al., 2021). Reflecting similar sentiments to those emerging in the nursing literature, participants identified COVID-19 as a precursor to a future where health care systems are overrun by the downstream implications of climate change (LeClair et al. 2021; Nash, 2021; Potter, 2022).

**Building Community and Broadening Nursing Practice.** Building a sense of community stood out among participants in their efforts to move from their individual concerns to approaching nursing as local and global planetary health citizens with humility and openness to learning from others. Kalogiou et al. (2020) emphasized the potential for nurses to engage in community outreach and partner with local leaders to support community climate change mobilization and broaden nursing practice. My study participants were highly engaged in their communities and were often approached to share a health perspective on climate change in activities such as municipal roundtables, community presentations, and newspaper columns.

Connecting with others in various health care settings, participants flourished in reciprocal relationships with student nurses, other health care professionals, and nurses who joined environmental nursing groups. Such groups offered real-world experience for students and nurses to become involved in planetary health, which is vitally important for growing community connections and building capacity for nursing to influence planetary health issues (Cupelli et al., 2021; Teherani et al., 2020). I witnessed the value of nurses being involved in community settings while observing a presentation in a nursing environmental interest group. The presentation involved a statistical analysis of populations exposed to airborne pollution due to changing weather patterns. The content seemed quite dry, but nurses connected the problem to people by asking questions about their families and livelihoods. They discussed the people behind the statistics and focused on the health implications to those who would be exposed to airborne dust. They shared an ability to relate to an environmental problem by advocating on behalf of humans facing health consequences, reflecting what LeClair (2021) described as analytical stretching or a pedagogical focus on expanding ways of knowing and relating to the

worldview of others. There is tremendous potential for knowledge mobilization in the exchange of ideas among a community of nurses focused on planetary health.

Mundie and Donelle (2022) pointed out that most policy statements encourage modelling environmentally sustainable nursing strategies “but provide few pragmatic recommendations as to how to proceed” (p. 470). Through environmental nursing groups, participants of this study modelled functional approaches by developing comradery, building capacity, and gaining inspiration among like-minded people. Similarly, Kalogirou et al (2021) referred to creating environmentally aware cultures within hospitals, creating opportunities to discuss and model sustainable practices, and promoting planetary health activities such as Nurses Drawdown, Health Care Without Harm, and Planetary Health Clubs (Huffington et al., 2021; Karle-Bhat et al., 2021). Mundie and Donell (2022) described the role of environmental nursing groups in developing skills that could increase the visibility and coordination of environmental health among nurses and other health care providers and could lead to more effective policy development. This research has demonstrated there is strength among nurses in community with planetary health-minded people that may serve as a model to increasing planetary health awareness among nurses by forming larger networks of shared resources within localized communities of practice.

**Harvesting Good Energy and Sustaining Oneself.** This sub-theme represents participants demonstrating vitality through their planetary health work, being proud of their achievements, and finding ways to celebrate and share positive energy to sustain their participation despite difficult topics such as climate change. In my engagement with current nursing literature, I noticed a focus on the challenges associated with planetary health. However,

in observing the motivations among participants to get involved, I noticed their desire to connect with other people who cared deeply about nature. Meeting with other nurses was particularly meaningful among participants as an opportunity to share ideas of mutual concern in ways that they may not have been as comfortable sharing in other social situations. Participants described feeling inspired and rejuvenated through conversations with like-minded nurses and other health care professionals and by applying their skills and motivation to be part of planetary health solutions. Moreover, Terry et al. (2019) described “environmentally ‘woke’ nurses” (p. 730) as nurses who have liberated themselves from normative nursing practices and who are empowered to care for individuals, communities, and the planet within their daily actions. Participants demonstrated that by acting on their planetary health awareness, they were in fact sustaining themselves against the debilitating impact of contributing to problems that they cared deeply about.

Caring deeply about nature was observed as a holistic expression within the lives of participants, many of whom expressed their sense of interconnectedness with nature as part of their spirituality. Lincoln (2000) related eco-spirituality in the context of nurse caring as actions and conscious feelings toward a holistic appreciation for nature on an intuitive and embodied level. Participants expressed a greater sense of meaning and purpose within their nursing practice when given opportunities to extend their care world to the physical environment. I relate this sense of meaning and purpose to Lincoln’s (2000) description of “tending” (p. 235), which in the context of eco-spirituality is an active dimension of relatedness that comes from offering oneself to fulfill a need. Participants manifested tending as nurturing, caring, and engaged individuals who shared their planetary health work to support the efforts of others while enriching their own

lives. Participants also demonstrated tending as an intuitive connection to nature expressed through various art forms that they personally used to sustain and empower their planetary health engagement.

Participants demonstrated an appreciation and sensitivity to the beauty of natural spaces with some referring to the everyday magic and mystery that they experienced in nature. The arts-informed participant self-reflections within this research further demonstrated deep personal and spiritual connections to nature and an openness to expressing feelings and experiences as aesthetic knowing that drew on inner creative resources. Creating artistic responses to planetary health questions can be therapeutic, build conversations, and express spiritual connection to nature (LeClair, 2021). Likewise, Brigham (2021) described weaving language, art, and infrastructure in planetary health education as “paradigm work to heal the human-nature divide” (p. 269). Consistent with Brigham’s description, participants also related to the paradigm work and emphasized human-nature interconnectedness through their artistic reflections.

Taking care of the land and rejuvenating nature was an important part of interpreting what Rogers (2021) referred to as “centering collective flourishing and being in reciprocal relationship with the planet” (p. 268). Lincoln (2000) also referred to a sense of reciprocity in taking care and healing oneself as an action toward healing the planet. The pattern of connection between participants and the land was also represented in their acknowledgement and appreciation for the interconnectedness of nature expressed within Indigenous ways of knowing. Being open to traditional Indigenous perspectives enabled a greater understanding of the complex interactions of nature and how humans have a responsibility to protect planetary health (Hanson et al., 2021; LeClair, 2021; Lewis-Hunstiger, 2021). Petrasek MacDonald et al. (2015)

described the importance of connecting with the land to protect the mental health of Indigenous youth experiencing climate change. Planting and harvesting food, connecting to local Indigenous communities, and participating in Indigenous educational experiences were profound opportunities that influenced the nursing practice of participants and enabled them to harvest good energy from their work.

**Taking Stock, Letting Go, and Regrouping.** This sub-theme exhibits the ways participants reflected on past and present experiences in planetary health engagement by taking stock of what had worked and what had not worked in order to regroup and move forward. In so doing, participants consolidated their knowledge and experience to best inform their approaches to planetary health. I observed participants expressing honesty and self-awareness about their strengths and weaknesses, as well as their fears and joys. Within environmental nursing groups, participant facilitators collaborated without fixed expectations. They welcomed ideas and set realistic limits on what could be achieved. I relate this sub-theme to what Rosa et al. (2019) referred to as an attitude of reverence in holistic nursing, one that “allows the partnership to emerge without fixed expectations or predetermined outcomes” (p. 387). This sub-theme is reflective of how participants expressed a holistic way of knowing planetary health that allowed them to be open to receive new awareness and ideas, choose some activities over others, and let go of things that were important but not working out, such as under resourced initiatives.

This sub-theme also relates to participants working toward finding peace in their own capacity and ability to support multiple and often competing personal and professional commitments for their time and energy. I observed several environmental nursing group meetings where participants were invited to come as they were, share what they could, and do



what they had to do in the time they had available to meet. This open-ended and welcoming approach to group meetings was facilitated through video link and allowed participants to join from diverse locations. Many of the meetings stood out as opportunities for a shared sense of reverence for the planet and for participants to be engaged in the solidarity of a shared community (Rosa et al., 2019). Participants were able to take stock, let go, and regroup during meetings that focused on strategic planning, collaborating on a position statement, or following up on the disappointing outcomes of an international climate conference.

A final example of the act of taking stock, letting go, and regrouping was when participants at a meeting heard about a poor international climate conference outcome. Their immediate response exemplified this sub-theme by taking stock of the bad news, letting it go, and regrouping an organizational response that focused on increasing membership advocacy for climate change mitigation. This approach changed the tone of the meeting from disappointment to positive action. By replacing bad news with positive action, participants also exemplified Lincoln's (2000) description that harmony and balance for our inner and outer experiences in life can be enhanced when we support and engage in activities and choices that promote peace and positivity. Seeking harmony and balance stands within each of the four sub-themes that describe a functional environmental consciousness.

***Theme 3: Placing Shield up and Heart Open Toward Challenge***



This theme explores how participants calculated risk, protected themselves and others, and lead from the heart. Environmental work is not easy, but participants demonstrated courage and perseverance in their commitment to peaceful advocacy, activism, information sharing, and community engagement. In referring to direct action among health care providers protesting in silence in front of a regional legislative building, one participant described activism as an empowering experience. Rosa and Upvall (2019) described planetary nursing as building on nursing's history of advocacy from a global perspective and embracing planetary health as a priority in the work of nurses "as facilitators of healing, leaders, and activists for social justice and health equity" (p. 166). Participants did not define themselves as activists, yet the multi-faceted nature of their planetary health activities always carried a strength of purpose for activism in terms of their choice to be involved and how passionate they were on issues. The sub-themes sustaining resiliency to do the work and overcoming barriers to engagement emphasize the challenges nurse participants faced when focusing attention on issues they care about.

**Sustaining Resiliency to do the Work.** This sub-theme describes the strength and resilience of participants in providing supportive and sustainable environments for engagement in planetary health activities. It relates to what Catton (2023) described as "a fundamental relationship between the practice of nursing and the cohesion, solidarity and peacefulness of the societies we live within" (p. 8). Participants demonstrated an ability to bring people together to solve problems. They made room for different voices and encouraged others by leading by example. Participants protected their own resiliency by choosing activities on their terms and considering their available time and energy levels before committing. They avoided situations

where they felt compelled to act outside of their own capacity or based on the expectations of others.

The COVID-19 pandemic created unprecedented stress in the lives of nurses and within health care systems (Martin et al., 2023). Participants demonstrated resiliency by continuing to do planetary health work amid the pressing challenges and downstream priorities of a global health pandemic. Participants experienced what Florell (2020) shared as “action in the form of activism” (p. 136) in their response to injustices highlighted during the COVID-19 pandemic. Examples of their action reflecting resiliency included building online community forums and continuing to meet within environmental nursing groups, raising awareness of harm to more-than-humans from the improper disposal of personal protective gear, writing about their nursing experiences, and drawing attention to global health inequality and the risk of future zoonotic diseases related to habitat loss. In a study on environmentally engaged nurses, Terry et al (2019) noted that “continued activism required personal resilience” (p. 730). Despite the COVID-19 pandemic, participants choose to step forward and contribute to this research project, which also demonstrated their resiliency to stay involved in planetary health activities even though they were experiencing increased work stress.

As awareness of planetary health challenges increase, health care professionals are grappling with an ethical imperative to resist forms of unsustainability that undermine peace and security, climate and health, and social and environmental justice (Essex et al., 2023). Participants commented that in order to sustain their employment as nurses in health systems, they needed to follow the rules and expectations associated with their professional nursing registration and avoid reputational risk and negative views from colleagues and the public. Essex

et al. (2023) raised questions about what forms of resistance are justified among health care workers and how nursing ethics and professional regulatory bodies interpret ethical imperatives for planetary health action. Upon further reflection, I noticed how participants often shared an aversion to high profile and public-facing planetary health activities. I have considered such aversion to be primarily related to their focused concentration on what they could personally and professionally sustain alongside their multiple and often competing commitments of family and work-life balance. Nurses taking on roles of resistance in support of planetary health may seem counterintuitive within health systems, but it might be the kind of influence needed for a system change toward sustainability.

**Overcoming Barriers to Engagement.** Overcoming barriers to engagement relates to how participants focused on overcoming challenges in order to grow planetary health support throughout the nursing profession.

The literature clearly documented the ecological knowledge gap in nursing education as a significant barrier (Mundie & Donelle, 2022; Potter, 2019; Potter et al., 2021). Participants echoed this sentiment by identifying planetary health education as a priority to build capacity for future nurses. However, participants also recognized that educational processes for the next generation of nurses are slow and cannot respond quickly enough to meet the urgency of climate change mitigation now. After conducting a content analysis, Mundie and Donelle (2022) noticed that policies and nursing competencies about health and the environment were still not directly linked to action within nursing regulatory bodies. Building nursing practice competencies for health and the environment will take time to mandate within nursing practice. In the immediate

term, participants advocated for educational efforts and resources to be directed to practising nurses.

Kalogirou et al. (2021) wrote that nursing advocacy from a bottom-up approach is most needed to impact health care policies and processes. Similarly, Roden and Lewis (2021) challenged current nursing education and health care delivery models to transform by integrating sustainable health care as a holistic community-based system. Participants also recognized that moving away from traditional hospital-based health systems may support more sustainable health care, which is relevant to the work of Roden and Lewis (2021) who recognized that changing global patterns requires movement away from unsustainable health care facilities that are based on a medicalized approach to health and wellness.

Participants demonstrated effort to overcome the barrier of ecologically counterproductive nursing practices by looking at practical applications that could improve day-to-day activities. Kalogirou et al. (2020a) discussed nurses' perceptions of abundance as well as scarcity of medical supplies and how paradoxically both ways of thinking had an impact on increasing the amount of waste produced. The challenges of wound management, non-sterile glove use, and change processes within workplace culture are examples of the depth of practice transformation that is needed to adapt to sustainable practices (Biederman, 2021; Morton, 2022). Likewise, Cubelo (2023) reiterated the concern that climate science and recommendations for best practices are being translated into health care and nursing practice much too slowly.

Participants described barriers to people's perception of planetary health and described the value of using stories to convey meaning and move people to rethink their own perceptions of climate change. In connecting with people, participants often shared their own stories as

nurses, for example their experiences in forest fire situations. Stories have the power to transcend political viewpoints (Amerson et al., 2022) and inspire conversations that can make new social connections that might otherwise not exist (Brigham, 2021). Cupelli (2021) described the use of story within an immersive farm experience among nursing students that transformed their perception of local food systems, nutrition, and food security. Nursing literature provides other examples where stories have been used to examine and challenge the colonial influences that have shaped our understanding of relationships between humans and more-than-humans (LeClair 2021), communicate climate-refugee experiences (Hanson et al., 2021), and disseminate personal stories of people affected by climate emergencies (Teherani et al., 2020). Consistent with what I observed in my research, these examples showed how stories are powerful tools to inform people about the reality of planetary health impacts and may lead to new insight and support for environmental action.

***Theme 4: Embracing Nursing’s Place in Planetary Health***



This theme reflects how deeply my participants valued their nursing role to affect change throughout the nursing profession on a local and global scale. They embraced and led efforts regarding nursing’s role for the health and well-being of the planet and all its lifeforms. Beck and Dossey (2019) proposed that nursing can play an important role in guiding and educating

individuals about health management and sustainable living, thereby contributing to the overall health of the planet. Participants overwhelmingly called for planetary health to be embraced in all aspects of the nursing profession and for multi-pronged approaches that would link human health with planetary health. Participants also emphasized the value of sharing nursing perspectives that are informed by planetary health knowledge. Likewise, Sullivan and McCauley (2017) encouraged interprofessional collaboration among health professionals to be more effective in addressing climate change. Finding our voice and leveraging our superpower are two sub-themes that aim to operationalize priorities participants described for nurses and the nursing profession to engage in planetary health.

**Finding our Voice.** This sub-theme highlights the capacity for nurses engaged in planetary health to influence planetary health advocacy and lead social change. Participants acknowledged the importance of moving the nursing profession toward goals of social and environmental justice. This is in line with current nursing literature and guiding policy and position statements throughout the nursing discipline that aim to build and support coalitions seeking social justice by eliminating health disparities (Florell, 2020). Participants demonstrated empowerment by getting involved and being inspired to make a difference. Florell (2020) related how values of social justice when combined with empowerment can lead nurses to choose activism as an intervention to change health inequalities. Participants valued health equity, inclusion, and the protection of nature for all life. These elements are considered key sustainable development goals (Oerther & Rosa, 2020; Office of Disease Prevention and Health Promotion, n.d.).

Unifying nursing voices in support of planetary health is a powerful way to express global solidarity for challenges such as climate change. Nersesian and Looman (2022) described that the collective action of nurses as global advocates for planetary health will gain the attention of policy makers and impact policy directives for sustainability. Howes and Warwick (2023) as well as LeClair (2021) encouraged inclusion within a unified nursing voice, which requires decentring White Western voices to broadly hear and support other ways of knowing among nurses. Cheng (2021) referred to ways of knowing where harmony between people and the environment is emphasized in a collective and interdependent way of knowing, and where the independent self is not centred as it is in Western culture. Unpacking individualistic and collectivist world views in the context of planetary health challenges is an important consideration for what inclusion means within a unified nursing voice.

As first-hand witnesses in their communities, participants advocated for a clear overarching mandate for planetary health within all aspects of the nursing profession. Participant descriptions and observations related to current literature on the need to clarify and provide ways to support nurses in understanding that climate change is a nursing practice concern (Kalogirou et al., 2020a; Nicolas & Breakey, 2019). In current literature, researchers highlighted that nurses see environmentally responsible practice as either incompatible or at odds with nursing priorities (Kalogirou et al., 2021) and that the lack of environmentally sustainable practice examples hinders nurses from meaningful action (Mundie & Donelle, 2022). This research has aimed to fill the practice awareness gap by emphasizing meaningful, practical examples of planetary health activities voiced by nurses.



Participants did not specifically mention the need for planetary health voices in senior nursing leadership roles, but this may be because such roles currently lack a planetary health mandate. Rosa (2021a) pointed out that a planetary health perspective among nurses would help foster more leadership and policy development in this emerging area of health care.

**Leveraging our Superpower.** Whether through direct nursing practice, education, administration, consultation, or identifying as a nurse while engaging in community activities, participants acknowledged and appreciated the respect they received for being part of the nursing profession. The status as a highly trusted and valued profession is nursing's superpower that needs to be leveraged to affect change. In reference to activism, Florell (2020) suggested there is a need for nurses to feel empowered to act. Participants who stepped forward to join this research project exemplified their efforts to have their nursing voices heard. Many participants stood out as nurses who are well positioned for leadership roles, which is something that Baumann and Shaw (2022) suggested nurses need to do worldwide.

Participants described a growing social and professional momentum in which nurses have more access to planetary health learning resources, receive positive media attention, and have increasing political influence (Baumann & Shaw, 2022). Nurses also have more opportunities to engage globally through publishing on climate change, using social media, and accessing new opportunities for nursing leadership within environmental health nursing practice (Chairard, 2022; Mundie & Donelle, 2022). Participants said that respect for nurses in society opened doors for planetary health communication and engagement. Positioned at the centre of primary preventive care and community health, 27.9 million nurses around the globe have the trust and

credibility among the people and communities that they serve (Rogers, 2021; Teherani et al., 2020).

***The Embodiment of Planetary Health Nursing: An Artistic Representation of Participant Journeys, Approaches, Activities, and Priorities.***

**Figure 15:**

*The Embodiment of Planetary Health Nursing*



The merging of the four theme images, shown in Figure 15, expresses the embodiment of participant journeys, approaches, activities, and priorities as a reflection of planetary health nursing. The study's findings inform this artistic reflection and show that life's journey within nature is intentional with ancient roots and new challenges. At numerous junctures, participants reiterated that we are within nature, not separate from it. Their feet are on the earth navigating the risk of human-made obstacles. The proximity of seasonal trees as arms represents the power of nature to express itself through nurses who, in caring for the planet, approach planetary health advocacy by moving toward the challenge. In this way, nurses are nature's resistance to

anthropocentrism. With hearts open, their resilience protects and sustains their efforts like a shield against the consequences of inaction or lost hope. With a challenging future coming into focus through climate change, so too is the need for nurses to mobilize support for everyone who will suffer the consequences. Earth as the head of the image, with the southern hemisphere pointing up, represents nurses' global concern and priority to mitigate the impacts of climate change.

This artistic reflection tells a story of interconnecting themes that are embodied among participants and may serve as an illustration of planetary health nursing. I refer to planetary health nursing as a reflection, not a definition. I see it as a feeling or a value that is expressed in the moment when nurses connect caring and compassion for the environment within their practice in ways that are inclusive of all life on earth. Planetary health nursing is not a representation of a specific group of nurses; it reflects the potential for all nurses to respond to global challenges through everyday choices and actions.

A further consideration of the themes and sub-themes identified and discussed in this research is how they align with Falk-Rafael's critical caring theory (2005), which serves as a lens for nurses to support planetary health.

### ***Planetary Health Nursing as an Example of Critical Caring***

Critical caring theory integrates and extends Falk-Rafael's earlier work in relation to Watson's caring science (Rafael, 2000), and provides a disciplinary focus of nursing that integrates concepts of caring, social justice, and advocacy (Chinn & Falk-Rafael, 2018; Falk-Rafael, 2005, 2012, 2020). There are four tenets of critical caring conceptualized as a way of being (ontology), knowing (epistemology), choosing (ethics), and doing (praxis). These tenets

are expressed through seven carative health-promotion processes derived from Watson's original 10 carative factors (2005). The seven carative health-promotion processes are referred to as ontological competencies that emphasize caring as a relational way of being (Falk-Rafael, 2005).

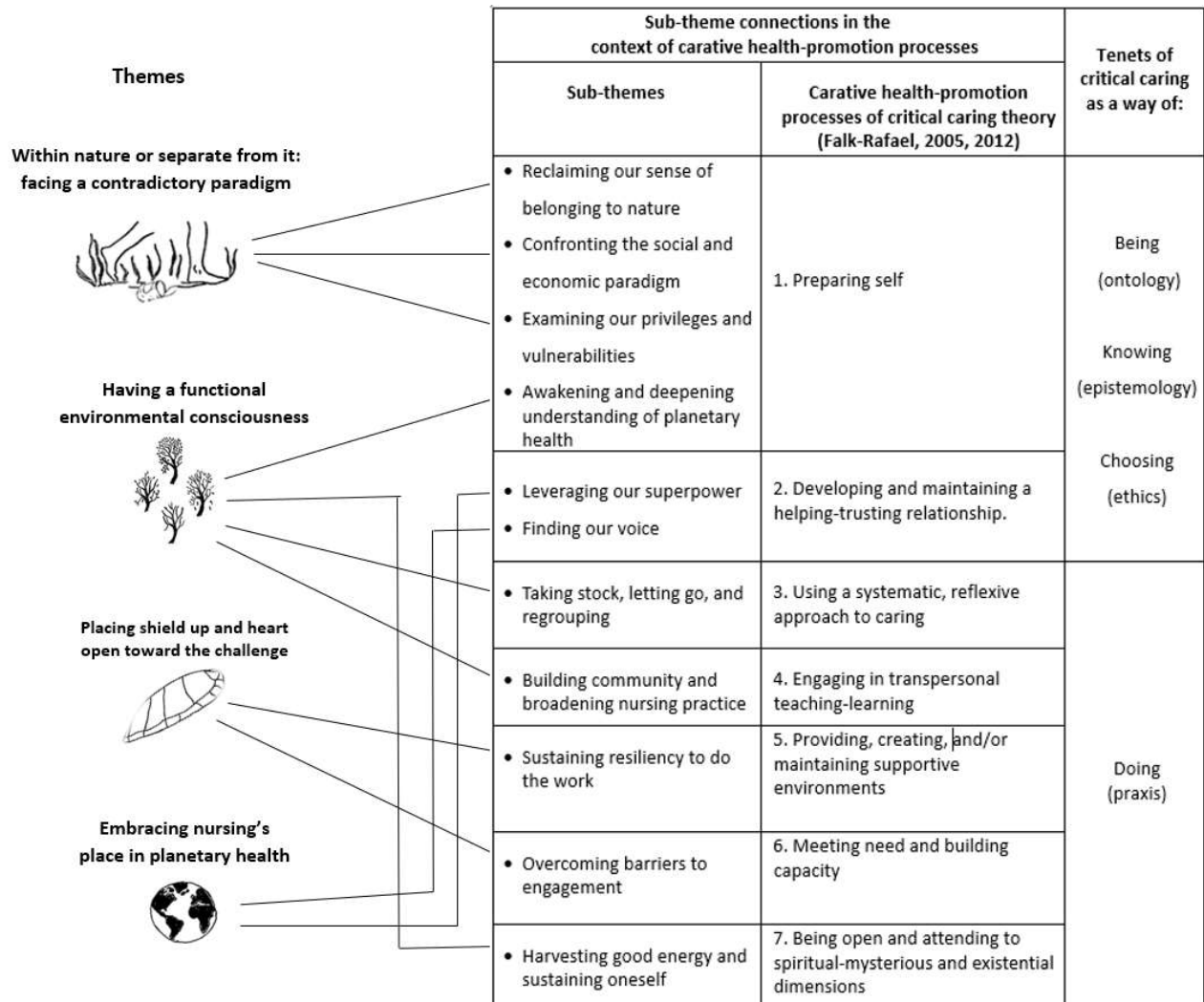
These seven processes are:

1. Preparing self.
2. Developing and maintaining a helping-trusting relationship.
3. Using a systematic reflexive approach to caring.
4. Engaging in transpersonal teaching-learning.
5. Providing, creating, and/or maintaining supportive and sustainable environments.
6. Meeting needs and building capacity.
7. Being open and attending to spiritual-mysterious and existential dimensions.

I will discuss each of the seven carative health-promotion processes of Falk-Rafael (2005) critical caring theory in relation to the themes and sub-themes identified from this research. As a precursor to this discussion, Figure 16 on the next page illustrates how I interpret a link between the themes and sub-themes from the analysis of this study and the intentions of the seven carative health-promotion processes and how they relate to the four tenets of critical caring. In so doing, the participants' efforts regarding climate change mitigation serve as an example of caring that is grounded in social justice and advocacy.

**Figure 16:**

*Theme and Sub-Theme Connections in the Context of Critical Caring Theory*



**Carative Health-Promotion Process 1: Preparing Self.** Preparing self is a core carative health-promotion process informed by three of the four tenets of critical caring: being, knowing, and choosing (Falk-Rafael, 2020). Critical caring as a way of *being* is an ontological lens for nurses to be in relation to others to promote healing and enhance wellness (Chinn & Falk-Rafael, 2018). As an epistemological lens, critical caring conceptualizes aesthetic, personal, ethical, emancipatory, and empirical ways of *knowing* and invites nurses to *choose* an ethical focus

toward advocacy for social justice as an expression of caring (Chinn & Falk-Rafael, 2018). The theme within nature or separate from it: facing a contradictory paradigm is relevant to preparing self for critical caring in terms of how participants positioned themselves within the status quo in order to challenge it. Participants of this study exemplified critical caring in their reflexive awareness of being connected within nature while also questioning their positionality in relation to the social and economic structures in which they live and work. Within this theme, the sub-themes of reclaiming our sense of belonging within nature; confronting the social and economic paradigm; and examining our privileges and vulnerabilities are relevant to critical caring as they express how participants conceptualized social and environmental justice, which is at the root of critical caring from a planetary health perspective.

Participants also demonstrated critical caring when their knowledge about planetary health challenges, such as climate change, was used to define their approaches to nursing practice. Preparing self for action and practical application is reflected in the sub-theme awakening and deepening understanding of planetary health within the theme having a functional environmental consciousness. It relates to critical caring in the ethical choices participants made from questioning patterns of dominance within society toward mobilizing their position of influence as nurses to support and enhance social and environmental justice. Within this theme, participants also reflected critical caring in how their lived experience and connection to nature informed their nursing practice in ways that were inclusive of all life, valued community connections, and paid particular attention to the care and dignity of those rendered most vulnerable in society.

**Carative Health-Promotion Process 2: Developing and Maintaining a Helping-Trusting Relationship.** Critical caring requires authenticity, respect, and active participation in the relationships nurses have with others (Chinn & Falk-Rafael, 2018). I consistently observed these characteristics among the participants in this study. Developing and maintaining helping-trusting relationships was an essential capacity participants demonstrated in how they embraced planetary health issues in public and among colleagues, friends, and family. Within the theme embracing nursing's place in planetary health, the sub-themes leveraging our superpower and finding our voice are both grounded in nursing relationships that can influence individuals and communities to understand that human health is planetary health. Participants described how they as nurses had social trust and influence when discussing planetary health, particularly when they related their own personal stories. Critical caring from a planetary health perspective is about relationship building for a sustainable future, which was a characteristic that stood out as a superpower among participants.

From the strength of preparing self and developing and maintaining helping-trusting relationships, critical caring includes praxis as a fourth tenant. Praxis, the *doing* of nursing, relates to the next five carative health-promotion processes. Participants, as nurses often do, stood out for what they were doing, expressing themselves as actively engaged people thinking about and doing planetary health work as a normal part of their personal and professional lives.

**Carative Health-Promotion Process 3: Using a Systematic, Reflexive Approach.** Critical caring uses a systematic, reflexive approach to caring which relates to being responsive to the needs, goals, and possibilities for moving an individual or community toward greater health (Falk-Rafael, 2005). Mutuality is identified as an essential component of this approach, in

which the sharing of feelings or action occurs between those involved (Chinn & Falk-Rafael, 2018). I relate this carative health-promotion process to the sub-theme taking stock, letting go, and regrouping where participants exemplified an evaluative approach to their planetary health activities by learning from past experiences and building upon best practices. Mutuality involves building relationships of trust and understanding between people, which is something that I observed among participants in how decisions about activities and priorities were reflective of the capacities of the group and what they were able to follow through on. At times, some planetary health activities or suggestions had to be let go, yet the group ensured that everyone involved in the decision was heard and respected. Group facilitators were also well prepared and respected the needs of others.

**Carative Health-Promotion Process 4: Engaging in Transpersonal Teaching-Learning.** Engaging in transpersonal teaching-learning in a critical caring context incorporates both caring science in stressing the importance of exploring meaning of a learning experience and the consciousness-raising and capacity-building intentions of critical social theories (Falk-Rafael, 2005). The sub-theme Building Community and Broadening Nursing Practice situates participants within this carative health-promotion process. It shows how they expressed themselves as authentically present in community-based environmental activities, environmental nursing interest groups, and while working with nursing students. I observed examples of transpersonal teaching-learning occur during the sharing of land acknowledgements at the beginning of meetings when participants took time to reflect on their own connection and sense of responsibility toward the land and in respect to the Indigenous people of this land.



Engaging in transpersonal teaching-learning also relates to community building in how participants spent time working with students and practising nurses, offering mentorship, and providing access to environmental nursing resources. The success of this research in finding participants was also a testament to the authenticity and quality of the people networking within environmental nursing interest groups and their commitment to transpersonal teaching and learning.

**Carative Health-Promotion Process 5: Providing, Creating, and/or Maintaining Supportive Environments.** The intention of this carative health-promotion process is to reinforce that health is a matter of social justice (Falk-Rafael, 2005). Critical caring assumes that a respectful and supportive environment can enable everyone to flourish and aim for their highest good (Chinn & Falk-Rafael, 2018). To achieve social justice, nurses cannot see critical caring as a passive endeavour. The sub-theme sustaining resiliency to do the work recognized that participants gave their time and energy to planetary health activities while exposing themselves to personal and financial risk, as well as social and professional scrutiny. Choosing activism to affect upstream socio-political change to address planetary health was a challenge among participants as it evoked concern over their code of conduct requirements for their professional nursing registration. This carative health-promotion process is also informed by a broad conceptualization of the environment and human interconnectedness that includes upstream nursing actions. This is relevant to how participants were involved in non-violent political advocacy, how they influenced planetary health policy around injustice within their circles of influence, and how they demonstrated their own personal actions in practice.

### **Carative Health-Promotion Process 6: Meeting Needs and Building Capacity.**

Critical caring supports a clear disciplinary focus from which nurses can view their practice (Chinn & Falk-Rafael, 2018). Falk-Rafael (2012) referred to meeting the needs and building capacity within carative health-promotion process six as activities that occur simultaneously in practice that often led to and inform political advocacy. This idea was captured in the theme placing shield up and heart open toward the challenge where participants were challenged and needed to exercise their autonomy for planetary health advocacy and resist the status quo of traditional forms of nursing practice. Often in collaboration with other nurses who shared an interest in promoting planetary health, the sub-theme Overcoming Barriers to Engagement is relevant to carative health-promotion process six in how participants met needs and built capacity within communities of practice. Participants forged networks with other health care disciplines and determined for themselves how their nursing practice could support planetary health activities.

**Carative Health-Promotion Process 7: Being Open and Attending to Spiritual-Mysterious and Existential Dimensions.** Being open and attending to spiritual-mysterious and existential dimensions is about exploring what might be considered unexplainable and honouring belief systems that enable people to find meaning in their experiences (Chinn & Falk-Rafael, 2018). I relate carative health-promotion process seven to the sub-theme Harvesting Good Energy and Sustaining Oneself because several participants expressed a nature-based spirituality and all participants described connections to the mystery and magic found in nature. Several participants regarded Indigenous ways of knowing and spirituality as important and sought ways to respect and promote various ways of making meaningful connections through nature.

Celebrating the seasons through food production and harvesting was a hands-on-earth approach that sustained and nourished the souls of several participants.

In conclusion, a critical caring theoretical lens can help unveil the work nurses do to promote planetary health. Indeed, the journeys, approaches, activities, and priorities outlined in this dissertation serve as an example of patterns of caring that are considered critical. Importantly, participants themselves critically reflected on dominant administrative hierarchies within health care that inhibited their expression of planetary health within their nursing practice. Working within the system required a delicate balance, while working outside it lacked financial viability. Participants demonstrated epistemological tension as people who embody planetary health within an anthropocentric society. Critical caring offers a theoretical perspective that can help make visible to nurses how they can redefine nursing practice in relation to planetary health (Chinn and Falk-Rafael, 2018). Expressing social and environmental justice as the language of nursing from a critical caring perspective can empower nursing advocacy and how nurses view their role in social change. Gaining and maintaining a sense of empowerment was not an easy process for participants. Many struggled with the convergence of exploitation and neglect of more-than-human elements of nature while also advocating for equal consideration of all life forms within the practical realities of daily life. Understanding their planetary health work as nursing work provided participants with a strength of purpose. Considering their disciplinary knowledge as critical caring may contribute to broadening the scope of practice among nurses worldwide.

## **Implications and Recommendations**

After connecting with nurses engaged in planetary health through interviews, participant observations, and arts-informed self-reflections, I provided a thematic analysis and scholarly discussion of their journeys, approaches, activities, and priorities in relation to planetary health challenges. I will now outline key implications and practical recommendations for practice, policy, education, and research that I hope nurses, administrators, educators, and researchers will consider for their own work.

### ***Practice***

Nurses may find this research relatable and gain new ideas about their own awareness, understanding, and functional capacity to engage in planetary health. This research could inspire nurses to think differently about planetary health and thereby influence their daily routines in ways that are not an extra burden, but a fundamental aspect of their nursing practice. Practice change moves from awareness to action and this research makes actionable the interdependence of nursing and the environment to express planetary health.

A key recommendation from this research that may impact nursing practice is that it encourages nurses to access nature intentionally and gain the benefits of understanding life, health, and well-being within nature, not separate from it. Nursing practice often occurs in artificial environments that are anthropocentric by design. They are climate controlled and technologically complex, which is distant from the natural world. Cultivating a mindfulness of nature can help practising nurses be grounded in any health care environment. For instance, interacting with natural elements, such as sunlight through a window or the subtle changes of the seasons, can support mindfulness. Taking care of indoor plants can be a calming and rewarding

part of nursing practice when enabled within a work setting. Going for a walk during breaks can include spending time in natural spaces, even in urban areas. As participants shared in this research, immersive experiences in wilderness can be further opportunities to reduce stress, rejuvenate energy, and connect with nature.

In addition to becoming more mindful of nature, participants demonstrated the value and vitality they gained from hands-on-earth activities that allowed them to express their nursing practice through community gardening, seasonal foraging, tree planting, and environmental restoration work. These examples are opportunities for new directions for ecological nursing practices that centre nature in the context of healing and sustainable health care. They reimagine the scope and impact of nursing practice by creating opportunities for nurses to participate in healing processes where patients experience hands-on nature-based health-promotion interventions. Practising nurses may also consider being active in environmental stewardship, outdoor therapies, and therapeutic gardening. These nursing interventions have mutual positive impact on both the environment and the practice experience of nurses.

This research also supports nurses redefining their practice for themselves in ways that are interprofessional, consider nature-based healing traditions, problem solving, and maintain hope through action. I encourage nurses to join environmental groups to further implement planetary health in their practice. For instance, nursing environmental groups can provide support and resources for practising nurses to advocate for hospital waste management strategies that respect nurses' workflow in recycling and reduce waste through investment in reusable supplies. By engaging with other planetary health-minded nurses, practising nurses can be

mentored to see themselves as health and wellness experts and leaders in advocating for planetary health within local, regional, and national initiatives and at all levels of government.

These recommendations for nursing practice represent new directions in the face of an old struggle for control by a medical establishment that is deeply rooted in suppressing community-based female healers (Kleffel, 1991a). Nevertheless, this research presents how nurses can reclaim intuitive, artistic, and community-minded approaches to nursing practice within and outside of health systems. It also demonstrates that nurses coming together out of a shared interest in planetary health is a powerful way to broaden nursing practice, support skills development, and extend nursing within systems of influence. By supporting nursing practices that step into planetary health challenges, nurses can become part of the solution and transform how health care is provided.

This dissertation serves to increase awareness, cultivate a planetary health perspective among practising nurses, and support nurses in adapting and broadening their nursing practice to face future planetary health challenges. The examples provided by participants may offer reassurance that caring for the planet is not only possible through nursing, it can be a catalyst for reimagining nursing practice.

### ***Policy***

This study identifies the importance of prioritizing planetary health within health care and regulatory policies and decision-making processes. Nurses who are engaged in planetary health may help guide the formulation of nursing and health care policies that express planetary health as a priority. Participants of this research demonstrated the value of nursing leadership in the coordination of planetary health initiatives among nurses by sharing their perspectives and

enthusiasm within interdisciplinary health care teams. In turn, health care leaders and administrators should support policy recommendations from these interdisciplinary teams that discuss and model sustainable planetary health practices and develop environmentally responsible cultures within workplaces. Health care policies that seek to support a cultural shift toward planetary health could benefit from implementing educational initiatives such as the Planetary Health Education Framework (Faerron Guzmán & Potter, 2021). This framework supports individual health care providers in their role as global citizens and can be used to create learning opportunities and inform policy and procedure working groups. Translating the value of inspired nursing engagement into opportunities for policy development is an important implication for health care and regulatory administrators to foster among nurses.

Nurses in this study presented a unique disciplinary perspective on planetary health and recognized limitations to expressing their work within nursing's scope of practice and codes of conduct that could risk their nursing registration and livelihood. For example, under current policies, nurses who want to express their environmental concerns through forms of civil disobedience and acts of resistance could face professional disciplinary action. An implication of this research is to recognize that regulatory policies discourage nurses from acting in ways that reflect their personal values of advocacy and activism for planetary health.

Participants identified that current health care policies do not emphasize enough of an overarching concern for planetary health. However, the stakes are high for health care institutions to demonstrate policies that lead to sustainable practices. To foster green policies within health care, hospitals should create opportunities to discuss sustainable practices that promote planetary health and environmental awareness. Promoting activities such as Nurses

Drawdown, Health Care Without Harm, and Planetary Health Clubs can increase the visibility and coordination of environmental health among nurses and other health care providers leading to more effective policy development.

In addition, this research highlights the importance of the trust and credibility that nurses have within their communities as an effective part of their advocacy efforts. Health care policies should enable and support advocacy by all health care providers for social and environmental justice within the communities they serve. Specific health care policy initiatives identified through this research include supporting the equitable access to care among people and populations rendered vulnerable due to climate change. This involves local community engagement in health impact assessments that include the voices and experiences of the actual people being impacted. To do this work, nurses need to have professional development in diversity and inclusion to support their efforts in effective community engagement for policy development.

Finally, health care sustainability policies that include integrative and holistic approaches to sustainable community-based health care delivery would enable institutions and organizations to foster nursing advocacy regarding climate change and its impact. These policies could include sustainable and healthy food policies in health care facilities that support the production of locally grown food and on-site community garden co-operatives; and GHG reduction policies that encourage safe and reliable active and public transportation options to and from health care facilities. Sustainable health care system processes could also focus on holistic care that integrates relevant nature-based health promotion for citizens and practitioners in a community context. Policy decisions at all levels within health systems should support community-based



nursing services and seek input from frontline nurses who are actively engaged in planetary health initiatives.

Nurses have a unique disciplinary perspective. It is essential to involve nurses in making decisions, solving the problems that they encounter, and creating effective planetary health policies.

### ***Education***

Recognizing that planetary health has a profound impact on human health, this study may help inform nurse educators to better understand nurses who are practising from a planetary health perspective. The following implications and recommendations may also support the role of nurse educators to integrate planetary health as a disciplinary focus for nursing students.

While increasingly found in nursing curricula, nurse educators are invited to reconceptualize the environmental paradigm of nursing, as discussed earlier in this dissertation, fostering classroom discussions and activities that enable students to explore ecological and climate systems, biodiversity, and the relationships between species. With the intention of centring nursing within a planetary health perspective, nursing education that conceptualizes planetary health as fundamentally interconnected with human health would be helpful.

Incorporating arts-informed self-reflections, as I did in this dissertation, is a practical way for students to express their feelings and convey meaning in relation to planetary health.

Nursing curriculum that includes opportunities for students to develop their sense of belonging within nature and their relation to more-than-human life would also be beneficial. It should provide a critical examination of the social and economic determinants of health and support students in becoming aware of the nurse's role in facing challenges among people and

populations who are rendered vulnerable due to climate change. This may lead educators and students to discuss nursing literature that examines social and environmental justice in terms of racism, sexism, and colonialism, while offering Indigenous perspectives on planetary health. Consistent with what participants outlined, current and future climate change education for practising and student nurses must emphasize social justice and the interdependence of ecosystems and human health.

Nursing students should be empowered to use innovative technology such as designing health care practices for sustainability. Nursing faculty in collaboration with health care innovation partners or nursing environmental networks could engage students to share and discuss their ideas broadly and lead to opportunities that could influence practice change. Moving beyond the classroom, this dissertation also encourages immersive experiences in nature as transformative experiences that could foster a stronger sense of being within nature, promote sustainability conversations, and influence behaviour changes at all levels of nursing education. Imagine if a portion of nursing education involved immersive experiences where students are enabled to make these connections for themselves—understanding the intricate links between human and planetary health and well-being! Nurses described in this research are redefining what constitutes nursing practice from an ecological perspective. They are resisting external pressures to conform to traditional roles and are seeking more opportunities to be involved in nature-based health-promotion activities. Both these factors represent opportunities for educators.

Finally, an excellent resource to address current practice and education gaps in nursing knowledge is the recent and comprehensive Planetary Health Education Framework (Faerron

Guzmán & Potter, 2021) that I already recommended to support planetary health policies. This framework is a clearly expressed guide that uses plain language to educate health professionals to become aware of global trends and issues and guide education and practice (Astle, 2021; Brigham, 2021; LeClair, 2021). While it is a transdisciplinary document, it serves nursing specifically well by providing a blueprint for a wide range of pedagogical, policy, and advocacy strategies for nurses and other health care professionals. Indeed, this document, in attending to planetary health knowledge, values, and practice, intentionally addresses five key domains including interconnection within nature; the Anthropocene and health; system thinking and complexity; equity and justice; and movement building and system change (Faerron Guzmán & Potter, 2021). The Planetary Health Education Framework's breadth and depth, in my view, make it a key forward-moving approach relevant to practice, policy, education, and research.

### ***Research***

This research is a preliminary exploration into nurses who are engaged in planetary health and highlights their lived experiences to inform a unique disciplinary perspective for nursing. Further research to expand our understanding of nursing within a context of urgency for climate change mitigation and adaptation is evident.

Studies are needed to develop further interpretations of nursing from diverse perspectives within the design and implementation of nursing research into planetary health. Specifically, a focus on diverse perspectives such as Indigenous nurses, Black nurses, and gender-diverse nurses, to name a few, would support knowledge and understanding of how planetary health is represented among nurses across cultures and through different ways of knowing.

While I have discussed critical caring theory as a way to see nurse engagement with planetary health concerns and demonstrated that the themes and sub-themes from this research express exemplars, more research would be instructive in relation to how the critical caring theory can be implemented within nursing practice. For example, while this study acknowledges that nurses are involved in activism for planetary health, further research is needed to understand how activism is defined and experienced among nurses engaged in planetary health.

This study may serve as a useful example for others investigating focused ethnographic research questions within a multi-methodology approach. In addition to the interviews, infusing an arts-based reflection for participants deepened the findings and provided a more meaningful experience for participants—something nurse researchers strive for. The participant observation phase of this study demonstrated the usefulness of this method for triangulation in qualitative research. Perhaps my methodology will give way to others considering non-traditional structures in their own triangulation efforts.

As a final point, other directions for further research include examining nurses, nature-based spirituality, health care, and planetary health to understand how or if these knowledges and experiences intersect into the professional practice of nurses and impact patient outcomes. Nurses bring a unique disciplinary perspective that should be included in multidisciplinary research into understanding the role of health care professionals who collaborate and network with each other to support planetary health initiatives. In summary, this study values how nurses can and do have an active role in shaping advocacy for humanity's response to planetary health challenges from a local to a global context.

## **Limitations**

While participants shared a depth of knowledge and experience related to planetary health engagement as nurses, this study has several limitations. First and foremost, I conducted this research from a position of privilege as a White, male, middle-class nurse researcher who has experienced minimal impact of climate change and injustice. Nurse researchers who experience marginalization or environmental injustices themselves would likely have different perspectives regarding questions that would guide inquiries pertinent to their lived experiences.

Similarly, since all but one interview participant identified as White, the perceptions and practices participants expressed in this study did not reflect nurses from diverse cultural, linguistic, or ethnic backgrounds. As a researcher of colonial settler heritage, I also presented a perspective that may be different from researchers from other backgrounds. For example, researchers who identify as Indigenous may have different perspectives on how this research was framed and conducted in terms of the analysis and interpretation of the findings (Hammond et al., 2018). Although appreciation for Indigenous perspectives was mentioned by participants and acknowledged within nursing literature, this research has not effectively incorporated the importance of Indigenous perspectives into nursing's consideration of planetary health. The studies I located during the literature search of this study also had a disproportionate representation of Anglo-dominant language and culture. Furthermore, while all participants were invited to share their gender and other aspects of their identity, it was not a key discussion point in any of the data collection or field work. I am therefore unable to articulate how or if gender played a key role in the patterns of caring of nurses engaged with planetary health.

While some might argue that the sample size of 14 interviews, six participant observations, and five arts-informed participant self-reflections is a limitation to this research, generalization was never my intention. The sample size is appropriate for my research method given the richness of my triangulation efforts.

Another limitation of the study was using a convenience sample comprised of nurses who responded to a flyer shared throughout North America through nursing environmental groups. This study referred to observations made at national and regional nursing interest group meetings, however the comparisons risk glossing over the particularities of regional and national contexts within each meeting. This research did not account for different national and regional political views toward the term climate change or how participants experienced that term within a national or regional context. Similarly, I did not differentiate between the terms activities, engagement, advocacy, and activism. This is a limitation expressed by Florell (2020) who indicated that nursing activism is poorly differentiated in nursing literature. Since I used the terms interchangeably, there is a lack clarity to inform further research that might focus on one or more of the terms as a specific form of nursing practice.

Finally, the findings of this research may not be transferable to other settings, people, or groups. This focused ethnographic research was not designed to test a hypothesis or draw inferences about larger populations of nurses (Polit & Beck, 2017). The findings can, however, inform other individuals with a similar common interest and focus.

In summary, the primary contribution of the findings and thematic analysis of this dissertation is the perspectives on the journeys, approaches, activities, and priorities of nurses who are engaged in supporting planetary health, which may in turn guide others who seek to do

the same. Despite the limitations mentioned, I hope the themes identified in this research are nevertheless relevant to conversations on decolonizing nursing and working toward a more equitable and sustainable future.

### **Conclusion: If Not Us, Then Who?**

When I embarked on this study, I was looking back on a nursing career that had been separated from my passion for nature. I had always resented participating in health care pollution and waste through my nursing practice and struggled to come to terms with my own awareness of climate change and what a 1.5°C global temperature rise would mean for my family and the inhabitants of this planet. Against this backdrop, a research opportunity developed from a seemingly inconsequential discussion in a first-year doctoral seminar where the idea “if not us, then who?” was floated. I realized that since nursing as a profession is focused on caring, it should be at the forefront of planetary health. I had not lived my nursing career in relation to planetary health, however I suspected there were people who did, and I wanted to focus this inquiry on sharing their stories.

After several years of preparation, I was inspired by the opportunity to connect with nurses who came forward to share their work. Throughout this research I have sought to decentre myself by examining my own biases, values, and assumptions in order to tell their authentic stories. As participants pointed out that some of my questions implied human separation from nature, I learned to unpack aspects of my own anthropocentric views toward nature. While reviewing nursing literature, I realized that if I had been exposed to Dorothy Kleffel’s *An ecofeminist analysis of nursing knowledge* as a nursing student in the early 1990s, it could have changed my entire perception of nursing’s role in supporting planetary health. I am sharing these

examples of my own transformative learning through this research process to suggest that the foundations of nurses to be engaged in planetary health have been well established in the literature and in practice for many years, but we need to scale it up beyond a special interest among individual nurses.

This study adds to the literature in several ways. In particular, this qualitative focused ethnographic study used semi-structured interviews, participant observations, and arts-informed self-reflections to explore the lived experiences of nurses who are engaged in planetary health issues. This approach is unique within the literature. Additionally, in contrast with Kalogirou et al. (2020a) who showed that nurses in a hospital context want to be environmentally responsible but do not know how to engage in nursing beyond a localized environmental context, my study shows how nurses can model and mentor planetary health engagement. The findings of these two studies speak to the importance of planetary health-conscious nurses influencing their colleagues, their community, and health systems.

Examining the focused research questions of this study related to the journeys, approaches, activities, and priorities of nurses who are actively engaged in planetary health provides evidence-based guidance that is practical and relatable to nurses and other health professionals. The analysis of this study identified how participants expressed a connection within nature, applied a functional consciousness to complex issues, sustained resiliency to be involved, and prioritized what needed to be done to support planetary health.

The following is a summary of the unique takeaways from this research:

1. Living within nature is an intentional journey that can inspire people to act on nature's behalf.



2. Unpacking our privilege in relation to others is important for self-awareness and reimagining unsustainable anthropocentric societies.
3. Approaching planetary health challenges in practical ways that focus on what we can do individually and that connect with others, can contribute to a positive sense of community.
4. Calculating risk, protecting oneself, and leading from the heart is central to planetary health advocacy for nurses.
5. Actively standing up for social and environmental justice is a consequence of caring about those who suffer.
6. Seeing their nursing role in society as a superpower empowers nurses to affect change throughout the nursing profession on a local and global scale.
7. Prioritizing mitigation of human-caused GHG emissions while adapting to global health realities is the future of nursing advocacy in the context of planetary health challenges.
8. To consider Planetary Health Nursing as a term that encompasses characteristics of a commitment to expand caring in ways that promote health and wellness with self, others, and the environment.

In concluding this dissertation, the following questions could lead to further thought and research:

1. What are the impressions of themes generated by this research study among the original participants and how might they contribute collaboratively to a knowledge mobilization strategy for this research?

2. How do the experiences of nurses from diverse backgrounds relate to the themes generated by this study?
3. How are nurses who serve communities at risk of climate disasters such as wildfires or floods experiencing their nursing practice and roles?
4. How can nurses implement policies, programs, and strategies to engage hospital-based nurses in planetary health initiatives?
5. What are the implications for nursing practice among nurses who participate in nature immersion programs?
6. In what ways do nurses express themselves as planetary health activists and how do they interpret the future of health care delivery in the context of planetary health challenges?

In summary, this research explored a preliminary connection of identified themes and sub-themes in relation to Falk-Rafael's (2005) critical caring theory. This theoretical perspective offers a lens through which nurses can be proactive in promoting social and environmental justice within their advocacy for those rendered vulnerable due to planetary health challenges. The question "if not us, then who?" resonated throughout this research project and within the implications and recommendations described for nursing practice, policy, education, and research. The discussion confirmed the findings of other nursing literature by acknowledging the urgency for the nursing profession to actively mitigate and adapt to climate change locally, regionally, nationally, and globally. The art shared by participants expanded the interpretation of this research and influenced my own use of artistic reflection for developing themes. My hope in expressing participant experiences as an embodiment of planetary health nursing is to inspire

others to find their own sense of meaning and purpose within nature in this important moment in human history.

Participants of this research demonstrated that nurses can exemplify an ecological perspective that empowers others. These nurses understand that planetary systems are changing in ways that undermine the consistency and predictability of the environment on which all life depends. Such nurses can be found within communities of practice, such as nursing environmental interest groups, and they need to be nurtured, valued, and championed for their unique contribution to supporting planetary health. They are artistic and community-engaged people who care about the environment as a home within nature where humans and more-than-humans can thrive.

Within the critical awareness that exceeding a 1.5°C global temperature rise is now expected in the next five years, it is essential that nurses lead individual and collective action toward mitigating and adapting to climate change in ways that sustain planetary health for future generations (World Meteorological Organization, 2023). Caring is a value that has the power to support the transformative changes needed to preserve a sustainable planet. Nurses witness much and are well positioned at this critical time to affect social change and stand up to notions of human dominance over nature. Through this experience, I have been afforded the privilege of getting to know nurses who are doing just that. I am humbled to have had this opportunity to bear witness to their efforts.

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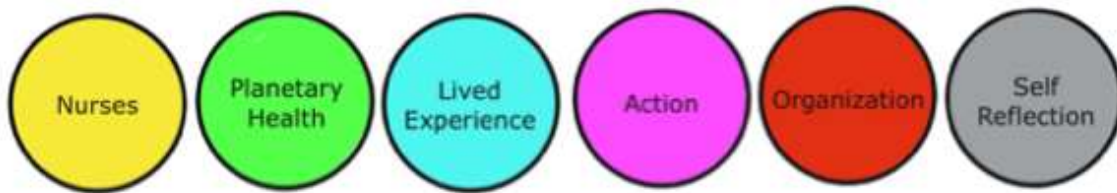
## Appendices

### Appendix 1: Research Question Keywords and MeSH Concept Headings

**Research Questions:**

1. How are **nurses** involved in **climate and ecological** issues **experiencing** their journey, approaches, activities and priorities for **action** in relation to the current crisis humanity is facing?
2. In what ways do/can **nurses** **embody** their participation within **organizations** focused on **climate and ecological** crisis issues?
3. How do the participants **view themselves** as **nurses** and the **ecological** **work** they are doing within an arts-informed participant **self-reflection**?

### Concept Chart: Six Concepts and Subsets






### Six Concepts

**Table 1: Concepts & Results**




#	Concept	Line #	OVID results	CINAHL results
1	Nurses MeSH	17	229844	1759153
2	Planetary Health MeSH	58	400286	74514
3	Lived Experience MeSH	98	390353	2253361
4	Action MeSH	35	155756	332069
5	Organization MeSH	84	303529	1479382
6	Self reflection MeSH	89	91323	70808

## Appendix 2: Boolean Operators and Truncations for Research Question Subsets

Research Question 1:





RQ 1	Concepts	Venn Diagram
<b>Step1</b>	Concept 1: Nurses Concept 4: Action  * $\cap$ = Intersection $1 \cap 4$  <b>Ovid result:</b> 10305 <b>CINAHL result:</b> 52772	
<b>Step 2</b>	<b>SS1: Combo Concept (1 <math>\cap</math> 4)</b> Concept 1: Nurses Concept 4: Action  <b>Ovid result:</b> 16181 (39) <b>CINAHL result:</b> 15022 (39)	<b>Combo MeSH</b> Ethics, Nursing/ Philosophy, Nursing/ Shared Governance, Nursing/
<b>Step 3</b>	Concept 1: Nurses Concept 4: Action Concept 6: Self reflection  $1 \cap 2 \cap 4$  <b>Ovid result:</b> 141 <b>CINAHL result:</b> 709	
<b>RQ1 Final</b>	Concept 1: Nurses Concept 2: Planetary health Concept 3: Lived experience Concept 4: Action  $1 \cap 2 \cap 3 \cap 4$  <b>Ovid result:</b> 38 <b>CINAHL result:</b> 23	

Research Question 2:

RQ 2	Concepts	Venn Diagram
<b>Step 1</b>	Concept 1: Nurses Concept 5: Organization  $1 \cap 5$ <b>Ovid result:</b> 11285 <b>CINAHL result:</b> 84746	
<b>Step 2</b>	<b>SS2: Combo Concept (1 ∩ 5)</b> Concept 1: Nurses Concept 5: Organization  <b>Ovid result:</b> 28403 (95) <b>CINAHL result:</b> 138811 (95)	<b>Combo MeSH</b> "International Council of Nurses"/ "National Institute of Nursing Research (U.S.)"/ American Nurses' Association/ Legislation, Nursing/ Societies, Nursing/
<b>Step 3</b>	Concept 1: Nurses Concept 2: Planetary Health Concept 5: Organization  $1 \cap 2 \cap 5$ <b>Ovid result:</b> 93 <b>CINAHL result:</b> 246	
<b>RQ2 Final</b>	$1 \cap 2 \cap 3 \cap 5$ Concept 1: Nurses Concept 2: Planetary health Concept 3: Lived experience Concept 5: Organization  <b>Ovid result:</b> 12 <b>CINAHL result:</b> 9	



Research Question 3:

RQ 3	Concepts	Venn Diagram
<p><b>Step 1</b></p> <p>Concept 2: Planetary Health Concept 4: Action</p> <p>* <math>\cap</math> = Intersection <b>2 <math>\cap</math> 4</b></p> <p><b>Ovid result:</b> 5379 <b>CINAHL result:</b> 4309</p>		
<p><b>Step 2</b></p> <p><b>SS3: Combo Concept (2 <math>\cap</math> 4)</b> Concept 2: Planetary Health Concept 4: Action</p> <p><b>Ovid result:</b> 28403 (95) <b>CINAHL result:</b> 138811 (95)</p>		<p><b>Combo MeSH</b> One Health/ Sustainable Development/</p>
<p><b>Step 3</b></p> <p>Concept 1: Nurses Concept 4: Action Concept 6: Self reflection</p> <p><b>1 <math>\cap</math> 2 <math>\cap</math> 4</b></p> <p><b>Ovid result:</b> 141 <b>CINAHL result:</b> 709</p>		
<p><b>Step 4</b></p> <p>Concept 1: Nurses Concept 2: Planetary health Concept 3: Lived experience Concept 4: Action</p> <p><b>1 <math>\cap</math> 2 <math>\cap</math> 3 <math>\cap</math> 4</b></p> <p><b>Ovid result:</b> 38 <b>CINAHL result:</b> 23</p>		
<p><b>RQ 3 Final</b></p> <p>Concept 1: Nurses Concept 2: Planetary health Concept 3: Lived experience Concept 4: Action Concept 6: Self reflection</p> <p><b>1 <math>\cap</math> 2 <math>\cap</math> 3 <math>\cap</math> 4 <math>\cap</math> 6</b></p> <p><b>Ovid result:</b> 0 <b>CINAHL result:</b> 3</p>		

Appendix 3: Keyword Concepts as MeSH Headings in MEDLINE with OVID Filters

#	Keyword	Special OVID filters for MEDLINE	MeSH terms
1	Nurses	nurs*	Community Health Nursing/ Education, Nursing, Continuing/ Education, Nursing, Graduate/ Education, Nursing/ Faculty, Nursing/ Holistic Nursing/ Models, Nursing/ Nurse's Role/ Nurses/ Nurses, Public Health/ Nursing Research/ Nursing Theory/ Nursing/ Parish Nursing/ Public Health Nursing/ Rural Nursing/
2	Planetary Health	conservation.ab,ti. enviro*.ab,ti. biodegradation.ab,ti. biodiversity.ab,ti. carbon footprint.ab,ti. (climate adj2 change).ab,ti. ecosystem*.ab,ti. ecolog*.ab,ti. pollut*.ab,ti. (global adj2 warming).ab,ti. (greenhouse adj2 (effect* or gas*)).ab,ti. (global* or greenhouse* or climat*) adj2 (effect* or warming or change).ab,ti. one health.ab,ti. onehealth.ab,ti. sustainability.ab,ti. (sustainable adj2 development).ab,ti.  If needed protect* or preservation, management	"Conservation of Natural Resources"/ "Environmental Restoration and Remediation"/ Biodegradation, Environmental/ Biodiversity/ Carbon Footprint/ Climate Change/ Ecosystem/ Environment/ Environmental Health/ Environmental Indicators/ Environmental Medicine/ Environmental Monitoring/ Environmental Policy/ Environmental Pollutants/ Environmental Pollution/ Global Warming/ Greenhouse Effect/ One Health/ Sustainable Development/



3	Lived Experience	<p>((("semi-structured" or semistructured or unstructured or "face-to-face" or guide* or "in-depth" or indepth or informal or structured) adj3 (discussion* or interview* or questionnaire* or response* or survey*))).ti,ab,kw,hw. or ((adapt* adj3 (respon* or react*)) or ethnograph* or "field work" or fieldwork or focus group* or grounded or "key informant" or experience* or narrat* or need* or qualitative or perception* or theor*).ti,ab,kw,hw.</p>	<p>Focus Groups/ or Interviews as Topic/ or Narration/ or Nursing Evaluation Research/ Nursing Methodology Research/ or Nursing Research/ or Nursing Theory/ or Qualitative Research/ or "Surveys and Questionnaires"/</p>
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4	Action	<p>(risk adj2 (evaluat* or mitigat*).ab,ti.  social determinants of health.ab,ti.  ((civil* or human*) adj2 (right* or freedom* or libert*).ab,ti.  (feminism or feminist*).ab,ti.  ((global or holistic) adj2 (health)).ab,ti.  (humanis* or humanitarian*).ab,ti.  lobby*.ab,ti.  (moral* or ethic*) adj2 (obligation* or responsib* or commit*).ab,ti.  (policy or policies).ab,ti.  (activism or activist*).ab,ti.  (right* adj2 health*).ab,ti.  (social* adj2 (justice or responsib*).ab,ti.  (wom?n* adj2 right*).ab,ti.</p>	<p>"Risk Evaluation and Mitigation"/  "Social Determinants Of Health"/  Civil Rights/  Feminism/  Global Health/  Holistic Health/  Human Rights/  Humanism/  Lobbying/  Moral Obligations/  Policy Making/  Political Activism/  Power, Psychological/  Right to Health/  Social Justice/  Social Responsibility/  Women's Rights/</p>
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5	Organizations	<p> organiz*.ab,ti.  admin*.ab,ti.  quality of health care.ab,ti.  advisory committee*.ab,ti.  (health or organiz* or public) adj2  (police* or regulation*).ab,ti.  local government.ab,ti.  multi-institutional system*.ab,ti.  organizations.ab,ti.  pan american health  organization.ab,ti.  public health.ab,ti.  red cross.ab,ti.  government*.ab,ti.  unesco.ab,ti.  united nation*.ab,ti.  (world health organization* or  who).ab,ti.  ((health care or healthcare) adj2  (social or public or universal)).ab,ti. </p>	<p> "Organization and  Administration"/  "Quality of Health Care"/  Advisory Committees/  Government Regulation/  Health Policy/  Local  Government/Organizational  Policy/  Organizations/  Pan American Health  Organization/  Public Health  Administration/  Public Health Practice/  Public Health Surveillance/  Public Policy/  Red Cross/  State Government/  Unesco/  United Nations/  United States Agency for  International Development/  Universal Health Care/  World Health Organization/ </p>
6	Self-reflection	<p> meditation.ab,ti.  mindfulness.ab,ti.  spirituality.ab,ti.  reflection or  reflexivity.ab,ti.  contemplat*.ab,ti. </p>	<p> Attention/  Meditation/  Mindfulness/  Spirituality/ </p>

#### Appendix 4: Translation Search Strategy from MEDLINE (via OVID) to CINAHL

#	MEDLINE via OVID	CINAHL
	<b>MESH term</b>	<b>MH:</b> Major or Minor subject headings <b>+:</b> subject heading search with explosions* <b>TX:</b> all text for broad search
1	Community Health Nursing/	(MH "Community Mental Health Nursing") OR (MH "Community Health Nursing")
2	Education, Nursing, Continuing/	(MH "Education, Nursing, Continuing") OR (MH "Continuing Education Providers")
3	Education, Nursing, Graduate/	(MH "Education, Nursing, Graduate") OR (MH "Education, Nursing, Masters") OR (MH "Education, Nursing, Doctoral") OR (MH "Education, Nursing, Post-Doctoral")
4	Education, Nursing/	(MH "Education, Nursing")
5	Faculty, Nursing/	(MH "Faculty, Nursing")
6	Holistic Nursing/	(MH "Holistic Nursing")
7	Models, Nursing/	(MH "Nursing Models, Theoretical")
8	Nurse's Role/	(MH "Nursing Role") OR (MH "Nurses by Role")
9	Nurses/	TX Nurses*
10	Nurses, Public Health/	(MH "Community Health Nursing")
11	Nursing Research/	(MH "Education, Nursing, Research-Based") OR (MH "Research, Nursing")
12	Nursing Theory/	(MH "Education, Nursing, Theory-Based") OR (MH "Nursing Theory") OR (MH "Nursing Practice, Theory-Based") OR (MH "Nightingale's Nursing Theory")
13	Nursing/	TX Nursing*
14	Parish Nursing/	(MH "Parish Nursing")
15	Public Health Nursing/	TX Public Health Nursing*
16	Rural Nursing/	(MH "Rural Health Nursing") OR (MH "Frontier Nursing Service")

17		
18	"Risk Evaluation and Mitigation"/	(MH "Risk Assessment")
19	"Social Determinants Of Health"/	(MH "Social Determinants of Health")
20	Civil Rights/	(MH "Civil Rights")
21	Feminism/	(MH "Feminism")
22	Global Health/	(MH "World Health")
23	Holistic Health/	(MH "Holistic Health")
24	Human Rights/	(MH "Human Rights")
25	Humanism/	(MH "Humanism")
26	Lobbying/	(MH "Lobbying")
27	Moral Obligations/	(MH "Morals")
28	Policy Making/	(MH "Policy Making")
29	Political Activism/	(MH "Political Participation")
30	Power, Psychological/	TX Power, Psychological*
31	Right to Health/	(MH "Right to Health")
32	Social Justice/	(MH "Social Justice")
33	Social Responsibility/	(MH "Social Responsibility")
34	Women's Rights/	(MH "Women's Rights")
35		
36	Ethics, Nursing/	(MH "Ethics, Nursing")
37	Philosophy, Nursing/	(MH "Philosophy, Nursing")
38	Shared Governance, Nursing/	(MH "Shared Governance, Nursing")
39		

40	"Conservation of Natural Resources"/	(MH "Conservation of Natural Resources")
41	"Environmental Restoration and Remediation"/	TX Environmental Restoration and Remediation*
42	Biodegradation, Environmental/	TX Biodegradation, Environmental*
43	Biodiversity/	TX Biodiversity*
44	Carbon Footprint/	(MH "Carbon Footprint")
45	Climate Change/	(MH "Climate Change")
46	Ecosystem/	(MH "Ecosystem")
47	Environment/	(MH "Environment") OR (MH "Natural Environment")
48	Environmental Health/	(MH "Environmental Health") OR (MH "Nurses Environmental Health Watch")
49	Environmental Indicators/	TX Environmental Indicators*
50	Environmental Medicine/	(MH "Medicine, Environmental")
51	Environmental Monitoring/	(MH "Environmental Monitoring")
52	Environmental Policy/	TX Environmental Policy*
53	Environmental Pollutants/	(MH "Environmental Pollutants") OR (MH "Environmental Pollutants, Pesticides") OR (MH "Environmental Illness")
54	Environmental Pollution/	(MH "Environmental Pollution")
55	Global Warming/	TX Global Warming*
56	Greenhouse Effect/	(MH "Greenhouse Effect")
57	Water Quality/	TX Water Quality*

58		
59	One Health/	(MH "One Health Initiative")
60	Sustainable Development/	(MH "Environmental Sustainability")
61		
62	"Organization and Administration"/	(MH "Health Facility Administration") OR (MH "Management")
63	"Quality of Health Care"/	(MH "Quality of Health Care")
64	Advisory Committees/	(MH "Committees")
65	Government Regulation/	(MH "Government Regulations")
66	Health Policy/	(MH "Health Policy")
67	Local Government/	(MH "Local Government")
68	Organizational Policy/	(MH "Organizational Policies")
69	Organizations/	(MH "Organizations")
70	Pan American Health Organization/	(MH "Pan American Health Organization")
71	Public Health Administration/	(MH "Public Health Administration")
72	Public Health Practice/	(MH "Public Health") OR "Public Health Practice"
73	Public Health Surveillance/	(MH "Environment and Public Health")
74	Public Policy/	(MH "Public Policy")
75	Red Cross/	(MH "Red Cross") OR (MH "American Red Cross")
76	State Government/	(MH "State Government")
77	Unesco/	(MH "UNESCO")
78	United Nations/	(MH "United Nations")
79	United States Agency for International Development/	(MH "United States Agency for Healthcare Research and Quality")

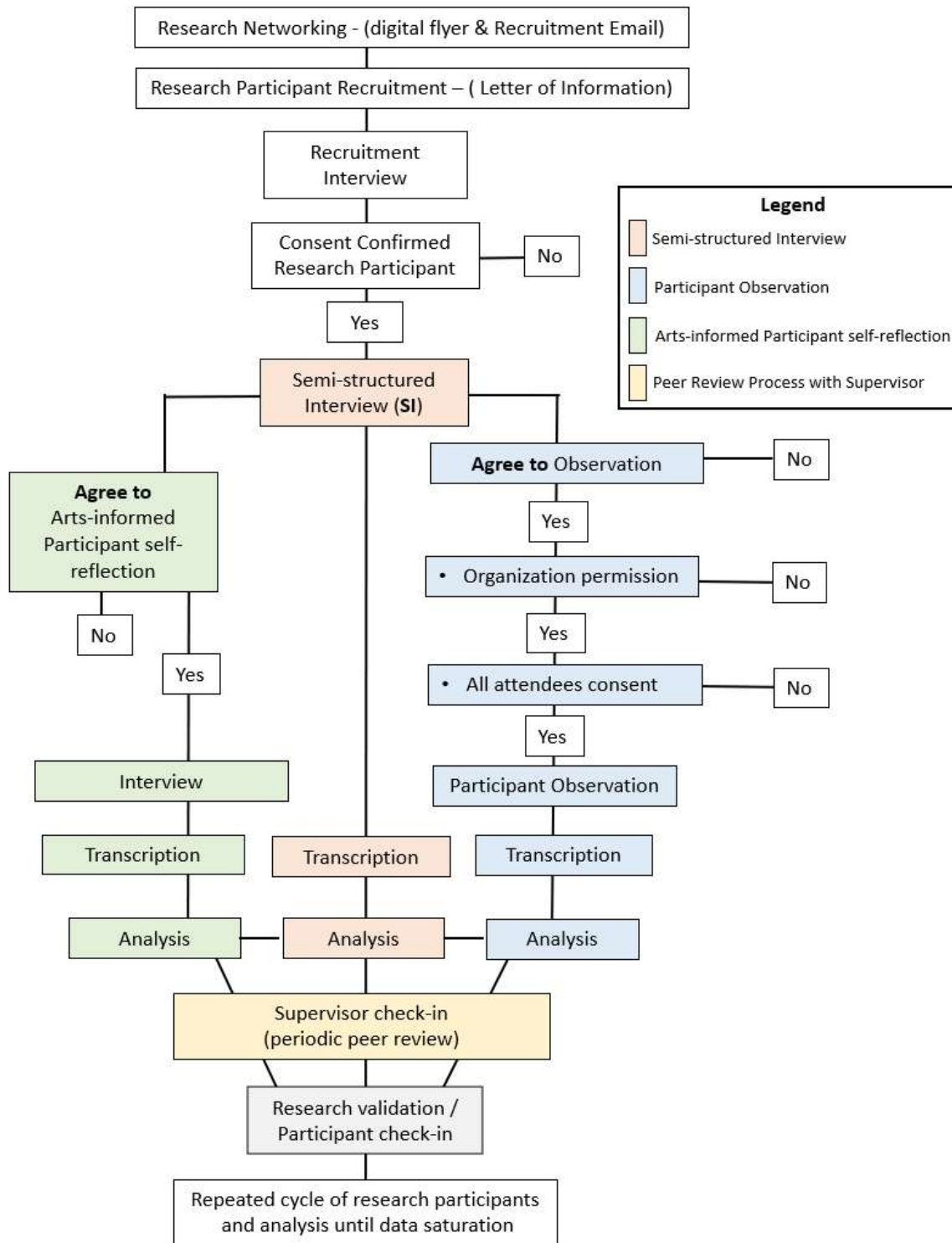
80	United States Environmental Protection Agency/	(MH "United States Environmental Protection Agency")
81	Universal Health Care/	(MH "Universal Health Care")
82	World Health Organization/	(MH "World Health Organization")
83	Multi-Institutional Systems/	(MH "Multiinstitutional Systems")
84		
85	Attention/	(MH "Attention")
86	Meditation/	(MH "Meditation")
87	Mindfulness/	(MH "Mindfulness")
88	Spirituality/ Awareness/ Creativity/	(MH "Spirituality") OR (MH "Psychological Well-Being")
89		
90	"International Council of Nurses"/	(MH "International Council of Nurses") OR (MH "South African Nursing Council") OR (MH "Nursing Organizations, International")
91	"National Institute of Nursing Research (U.S.)"/	(MH "National Institute of Nursing Research (U.S.)")
92	American Nurses' Association/	(MH "American Nurses Association California") OR (MH "American Nurses Association") OR (MH "American Holistic Nurses Association")
93	Legislation, Nursing/	(MH "Legislation, Nursing")
94	Societies, Nursing/	(MH "Nursing Organizations") OR (MH "Society of Trauma Nurses") OR (MH "Transcultural Nursing Society") OR "Societies, Nursing"
95		
96	grounded theory/ or hermeneutics/	(MH "Grounded Theory")

97	Focus Groups/ or Interviews as Topic/ or Narration/ or Nursing Evaluation Research/ Nursing Methodology Research/ or Nursing Research/ or Nursing Theory/ or Qualitative Research/ or "Surveys and Questionnaires"/	(MH" Focus Groups") OR (MH"Interviews +") OR (MH "Narratives+") OR "Nursing evolution research" OR (MH"Research Methodology +") OR (MH "Research, Nursing") OR (MH "Nursing Theory +") OR (MH"Qualitative Studies+") OR "Surveys and questionnaires"
98		



## Appendix 5: Research Methodology Flowchart

TD2 Research Methodology – Recruitment and Participant Flowchart



## Appendix 6: Introduction Letter to Organizations

Date:

To \_\_(insert name)\_\_ or To Whom It May Concern;

Hello, my name is Steve Cairns and I am a PhD Nursing Student (Y2) at York University researching Registered Nurses who are involved in activities related to planetary health.

I am writing to \_\_(organization name)\_\_ to request the following information be shared among your members as a way to network with potential Registered Nurses in your organization. The study is entitled: An exploration of patterns of critical caring among nurses facing planetary decline<sup>4</sup>. This project is supervised by Dr. Cheryl van Daalen-Smith of York University and is not associated with a funded grant.

Should you have any questions or concerns regarding this request please contact Dr. Cheryl van Daalen-Smith either by telephone at (416) 736-2100 extension 66691 or by email (cvandaal@yorku.ca).

Thank you for your consideration of this request.

Sincerely,

Steve Cairns RN, PhD(c)

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<sup>4</sup> The title “An exploration of patterns of critical caring among nurses facing planetary decline” has been retitled “If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses”

## Appendix 7: Information Poster

A monarch caterpillar with black, white, and orange stripes is crawling on a green leaf. The background is a blurred green leaf.

**REGISTERED NURSES  
NEEDED FOR RESEARCH INTO  
ENGAGEMENT OF  
ENVIRONMENTAL ISSUES**

**Are you a Registered Nurse who is involved in environmental issues pertaining to the current climate crisis? Yes? That is wonderful! Perhaps you might consider taking part in my PhD research study entitled: An exploration of patterns of critical caring among nurses facing climate and ecological crisis.**

**There is no financial remuneration for your participation.**

**For more information about this research project, please contact Steve Cairns, RN, PhD(c) , York University, School of Nursing via email at:**

**[steve71@yorku.ca](mailto:steve71@yorku.ca)**

**Thank you for considering this study!**

The title "An exploration of patterns of critical caring among nurses facing planetary decline" has been retitled "If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses"

## Appendix 8: Networking Letter for Prospective Participants

Hello!

My name is Steve Cairns. I am a PhD Nursing Student (Y2) in the Faculty of Graduate Studies, School of Nursing at York University. This letter is being shared among members of \_\_\_(organization)\_\_\_ to network with Registered Nurses within the environmental movement on planetary health.

If you are a registered nurse who is actively involved in addressing the challenges of planetary decline, you might be a suitable candidate for participation in a study entitled: An exploration of patterns of critical caring among nurses facing planetary decline<sup>5</sup>.

Nurses are increasingly encountering the implications of environmental degradation including the social injustices that occur among vulnerable populations. Some nurses are leaders in caring from an ecological perspective that advocates for a healthy environment and justice for those who are vulnerable. This study aims to interpret critical caring through the actions of those nurse leaders who are seeking ways to effectively respond to the planetary health crisis we face.

Should you choose to consider participating in this study, you will be asked to discuss the study proposal and intent with by telephone with the principal researcher. During the call, you will be asked to provide nursing work life examples of engagement in terms of environmental issues related to planetary health. Suitability as a research subject for this project will be mutually agreed upon by you and the principal researcher during the telephone call, unless more time is needed, and a decision date will be agreed upon.

If you are interested in participating in this study, or if you have any questions about this study, please contact me by email at [steve71@yorku.ca](mailto:steve71@yorku.ca). The requested commitment of this research is to expected duration of participant recruitment for this study will take place until October 2020.

Please feel free to forward this research study invitation letter to colleagues or friends who you think might be suitable candidates for participation. Your interest in this study is very much appreciated!

Sincerely,

Steve Cairns, RN, PhD(c)

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<sup>5</sup> The title “An exploration of patterns of critical caring among nurses facing planetary decline” has been retitled “If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses”

## Appendix 9: Letter of Information for Research Participants

Date: \_\_\_\_\_

Hello!

My name is Steve Cairns and I am a Doctoral Candidate in the Graduate Program in Nursing at York University in Toronto, Ontario, Canada. I am conducting a research project entitled: *An exploration of patterns of critical caring among nurses facing planetary decline*<sup>6</sup>. This project is part of my PhD degree under the supervision of Dr. Cheryl van Daalen-Smith.

The purpose of this research is to gain a greater understanding of registered nurses' (RNs) perspective in responding to the planetary health crisis. RNs who are actively engaged in environmental issues may help to identify broad implications for the future of nursing education, research, practice, and policy. You have received this letter because a colleague of yours participated in my study or thought that you might be a candidate for participation.

The study involves three parts, an interview with the principal researcher, observation of a meeting you are involved in within an environmental group/organization, and an arts-based reflection of your perspective of nursing in relation to the planetary health crisis. Each part is explained in further detail:

Part A: Participate in a one-on-one virtual interview to answer questions regarding your ecological orientation to daily life and nursing practice in relation to activities associated with planetary health.

Part B: Allow me to observe a meeting within an environmental organization that you are involved in. The observation will also depend on permission from the organization as well as consent from each of the other meeting attendees. The observation is to gain a greater understanding of participation of RNs in climate and ecological issues within a social context.

Part C: You will be invited to contribute to an arts-informed participant self-reflection to represent how you view yourself as a nurse and the ecological work that you participate in. This will involve the creation of a new or previously made expression of art and describing it in your own words. Permission to publicly share the artistic representation will be requested with the intention to inform others about the research.

You may choose to participate only in the interview and consider the participant observation meeting and/or the arts-based reflection at a later time. A separate consent will be requested for each part of the research that you choose to participate in. If you are willing to be observed in an environmental group/organization meeting, please consider the likelihood for permission from a leader of the organization, as well as consent from each of the meeting attendees.

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<sup>6</sup> The title "An exploration of patterns of critical caring among nurses facing planetary decline" has been retitled "If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses"

If you are interested in being a participant in this research or have any questions, please reply to this letter by email and I will arrange a date and time to discuss this research opportunity further by your preference of telephone or video conference. Before you decide to participate, it is important that you to understand why the research is being done, what the research involves and what to expect. My email address is [steve71@yorku.ca](mailto:steve71@yorku.ca). The requested commitment of this research is an expected duration of two months. Participant recruitment for this study will take place until October 2021.

Please feel free to forward this research study invitation letter to colleagues or friends who you think might be candidates for participation. Your interest in this study is very much appreciated!

Sincerely,

Steve Cairns, RN, PhD(c)



## Appendix 10: Interview Letter of Consent

Research Participant Letter of Consent – Interview

**Name of Participant:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Study Name:** An exploration of patterns of critical caring among nurses facing planetary decline<sup>7</sup>

**Researcher:**

Principal Investigator: Steve Cairns, RN, PhD (c)

Email: [steve71@yorku.ca](mailto:steve71@yorku.ca)

Sponsor: York University

**Purpose of the Research:** To gain a greater understanding of registered nurses' experience and perspective in responding to planetary decline in ways that may identify broad implications for the future of nursing education, research, practice and policy.

**What You Will Be Asked to Do in the Research:** The study involves your participation in a one-on-one virtual interview to answer questions regarding your ecological orientation to daily life and nursing practice in relation to activities associated with planetary health.

**Risks and Discomforts:** There is a potential risk of harm and/or discomfort in relation to the nature of the topic of planetary decline. If you are experiencing either harm or discomfort at any point in the interview, the interview will be stopped or be adjusted according to your needs. You have the right to not answer any interview questions at any point in the study.

**Benefits of the Research and Benefits to You:** Sharing your perspectives and experiences can contribute to an expanded knowledge base regarding nursing's engagement with planetary health. It is my hope that you would benefit from a greater appreciation of your environmental activities in relation to nursing practice. This research may be useful for identifying the experience of Registered Nurses responding to planetary decline.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time and remove your contributions to date. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researcher, York University, or any other group associated with this project.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason if you so decide. Your decision to stop participating, or to decline to answer any particular questions, will not affect your relationship with the researcher, York University, or any other group

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<sup>7</sup> The title "An exploration of patterns of critical caring among nurses facing planetary decline" has been retitled "If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses"

associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

**Confidentiality:** No specific identifying information will be collected during this research project other than your name, telephone, and email as contact information. Only a pseudonym name will be used on any research-related information collected about you as a participant during the interview for this study, so that your identity is kept confidential. Your identity will remain only with the Principal Investigator. All information you supply during the research will be held in confidence, your name will not appear in any report or publication of the research.

One-on-one interview data will be audio recorded. The interview will be conducted through an online video conferencing platform such as Zoom or by telephone, based on the participants preference. The researcher acknowledges that the host of the online video conferencing platform (e.g., Zoom, Blackboard, etc.) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researcher, it will not be used or saved without participant's consent on the researcher's system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus the confidentiality and privacy of data cannot be guaranteed during web-based transmission.

The materials from this study will not be destroyed as ongoing and future research questions may benefit from the data contained within. All paper interview notes will be retained locked in my home office and in a secure cabinet for a period of 3 years, at which time they will be destroyed. All electronic data will be stored indefinitely on an encrypted USB with no personal identifiers. The data collected in this research project may be used – in an anonymized form - by members of the research team in subsequent research investigations exploring similar lines of inquiry. Such projects will still undergo ethics review by the HPRC, our institutional REB. Any secondary use of anonymized data by the research team will be treated with the same degree of confidentiality and anonymity as in the original research project. Only research staff will have access to this information. Confidentiality will be provided to the fullest extent possible by law.

**Questions About the Research?** If you have any questions about your participation in this study or about the intended use of the results, please contact Steve Cairns, York University Doctoral Candidate at [steve71@yorku.ca](mailto:steve71@yorku.ca) . If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Cheryl van Daalen-Smith by email at [cvandaal@yorku.ca](mailto:cvandaal@yorku.ca) .

**This research has been reviewed and approved by the Research Ethics Board of York University.** If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5<sup>th</sup> Floor, Research Tower, York University (telephone 416-736-5914 or email [ore@yorku.ca](mailto:ore@yorku.ca)).

### **Legal Rights and Signatures:**

Once you have read this consent form and your questions have been answered, you will be asked to electronically consent by answering “yes” if you want to participate in a research interview for this study. By signing this electronic consent form, you are stating that you agree freely and voluntarily to participate.



Q1 Consent for research participation One-on-One Interview

I consent to participate in one-to-one interview as part of a research project entitled: *An exploration of patterns of critical caring among nurses facing planetary decline*, conducted by Steve Cairns. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. Indicating 'Yes' below indicates my consent.

Yes (1)

No (2)

Q2 Consent for research participation One-on-One Interview: Audio Recording

I consent to the audio recording of my interview(s) for the purpose of data collection in this research project.

Yes (1)

No (2)

Q3 Consent for research participation Part A: One-on-One Interview: Live-Stream Video

I consent to the use of livestream online video that is unrecorded, for interviewing during this research project.

Yes (1)

No (2)

Q4 Contact Information:

Please insert your full name: \_\_\_\_\_

Q5 Contact Email: \_\_\_\_\_

Q6 Contact Telephone: \_\_\_\_\_

Q7 Thank you for completing this consent form. Once your submitted consent form is reviewed, Steve Cairns will be contact you to confirm your participation in an interview for this study.

## Appendix 11: Participant Observation Letter of Information

To (Insert name of organization )

My name is Steve Cairns and I am a Doctoral Candidate in the Graduate Program in Nursing at York University in Toronto, Ontario, Canada. I am conducting a research project entitled: *An exploration of patterns of critical caring among nurses facing planetary decline*<sup>8</sup>. This project is part of my PhD degree under the supervision of Dr. Cheryl van Daalen-Smith.

The purpose of this research is to gain a greater understanding of Registered Nurses' (RNs) perspective in responding to planetary decline. RNs who are actively engaged in environmental issues may help to identify broad implications for the future of nursing education, research, practice, and policy.

I am seeking your consent to observe a virtual meeting in which you are attending on (date) within the (name of organization). I believe that RNs who are actively participating in climate and ecological issues have unique understandings and stories relevant to engaging other nurses in environmental issues.

Participation in the observation is completely voluntary. (name of Organization) has provided permission for the observation if consent is provided by all meeting attendees. The permission from (name of Organization) or your consent can be withdrawn at any time, ending the observation by myself and no observation notes will be recorded.

To support the findings of this study, quotations and excerpts from the observation will be used and labelled with pseudonyms to protect the identity of the attendees. Names of attendees and (name of organization) will not be recorded in fieldnotes or appear in the dissertation or reports resulting from this study. I will not be recording the meeting in video or audio form.

If you have any questions regarding this study or would like additional information to assist you in reaching a decision to grant permission for the research observation to take place, please contact me by email [steve71@yorku.ca](mailto:steve71@yorku.ca). You may also contact my supervisor, Cheryl van Daalen-Smith at 416-736-2100 Ext: 66691 or by email [cvandaal@yorku.ca](mailto:cvandaal@yorku.ca).

I hope that the results of this research will be beneficial to understanding nurses who are actively engaged in planetary health concerns. I have attached a permission form that would be used to confirm (name of organization) s' permission. I very much look forward to speaking with you regarding this study and thank you in advance for your consideration of this observational experience within my research project.

Yours sincerely,

Steve Cairns RN, PhD(c)

York University

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<sup>8</sup> The title "An exploration of patterns of critical caring among nurses facing planetary decline" has been retitled "If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses"

## Appendix 12: Organization Permission Form

We have read the information presented in the information letter about a study being conducted by Steve Cairns PhD(c) of the Faculty of Graduate Studies, School of Nursing at York University, Ontario, under the supervision of Dr. Cheryl van Daalen-Smith at York University. We have had the opportunity to ask any questions related to this study, to receive satisfactory answers to our questions, and any additional details we wanted.

We are aware that our organization and the meeting attendees will remain anonymous in the research fieldnotes as well as the dissertation or any publications that comes from this research.

We were informed that this organization may withdraw this permission to observe the meeting at any time. We were informed that meeting attendees may also withdraw their consent for observation at any time resulting in the observation to end and no observational data (fieldnotes) from the meeting will be recorded.

We have been informed this project has been reviewed by, and received ethics clearance through a York Research Ethics Committee and that questions we have about the study may be directed to Steve Cairns PhD(c) by email [steve71@yorku.ca](mailto:steve71@yorku.ca) and/or my supervisor Dr. Cheryl van Daalen-Smith at 416-736-2100 Ext: 66691 or by email [cvandaal@yorku.ca](mailto:cvandaal@yorku.ca).

We were informed that if we have any comments or concerns within this study, we may also contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Research Tower, York University (telephone 416-736-5914 or email [ore@yorku.ca](mailto:ore@yorku.ca)).

Steve Cairns

RN, PhD Candidate

Faculty of Graduate Studies, School of Nursing

York University

Once you have read this permission form and your questions have been answered, you will be asked to electronically provide your permission by answering “yes” to the following statement:

We agree to allow researcher Steve Cairns, to conduct a research observation of the following activity: \_\_\_\_\_ on (date) \_\_\_\_\_.

YES  NO

If “yes”

### Contact Information:

Q1 Please insert your full name:

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Q2 Contact Email:

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Q3 Contact Telephone:

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Q4 Thank you for completing this permission form. Steve Cairns will be contacting you to confirm if consent from all meeting participants has been determined.

Thank you for completing this permission form.

## Appendix 13: Participant Observation Letter of Consent

**Name of Participant:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Study Name:** An exploration of patterns of critical caring among nurses facing planetary decline<sup>9</sup>

**Researcher:**

Principal Investigator: Steve Cairns, RN, PhD (c)

Email: [steve71@yorku.ca](mailto:steve71@yorku.ca)

Sponsor: York University

**Purpose of the Research:** To gain a greater understanding of Registered Nurses' experience and perspective in responding to planetary decline in ways that may identify broad implications for the future of nursing education, research, practice and policy.

**What You Will Be Asked to Do in the Research:** The study involves an observation of a meeting that you are attending within an environmental group/organization. The observation will depend on permission from \_(name of organization)\_ as well as consent from each of the meeting participants.

**Risks and Discomforts:** There is a potential risk of harm and/or discomfort in relation to the nature of a group activity in which the topic of planetary decline is being discussed. There is also a potential risk of harm and/or discomfort if you choose to enable me to observe your participation among peers in \_(name of organization)\_. If you are experiencing either harm or discomfort at any point in the observation, the observation will be stop or be adjusted according to your needs. You have the right to not answer any questions at any point in the study.

**Benefits of the Research and Benefits to You:** This observation activity is an important part of a study regarding how nurses participate within environmental organizations involved in issues associated with planetary decline. You may not directly benefit from participating in this study. This research may be useful for identifying how Registered Nurses are engaging with others as a response to planetary health concerns.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time and remove your contributions to date. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researcher, York University, or any other group associated with this project.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason if you so decide. Your decision to stop participating, or to decline to answer any particular questions, will not affect your relationship with the researcher, York University, or any other group

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<sup>9</sup> The title "An exploration of patterns of critical caring among nurses facing planetary decline" has been retitled "If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses"

associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

### **Confidentiality:**

No specific identifying information will be collected during this research project other than your name, telephone, and email as contact information within this consent form. No specific identifying information about you will be collected during the observation. Data will be collected through fieldnotes recorded by the researcher. To support the findings of this study, quotations and excerpts from the observation will be used and labelled with pseudonyms to protect the identity of you as an attendee. Names of attendees and the organization will not appear in the dissertation or reports resulting from this study.

The researcher acknowledges that the host of the online video conferencing platform (e.g., Zoom, Blackboard, etc.) may automatically collect participant data without their knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researcher, it will not be used or saved without participant's consent on the researcher's system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus the confidentiality and privacy of data cannot be guaranteed during web-based transmission.

The researchers' fieldnotes from this observation will not be destroyed as ongoing and future research questions may benefit from the data contained within. All paper fieldnotes collected will be retained locked in my home office and in a secure cabinet for a period of 3 years, at which time they will be destroyed. All electronic data will be stored indefinitely on an encrypted USB with no personal identifiers. The data collected in this research project may be used – in an anonymized form - by members of the research team in subsequent research investigations exploring similar lines of inquiry. Such projects will still undergo ethics review by the HPRC, our institutional REB. Any secondary use of anonymized data by the research team will be treated with the same degree of confidentiality and anonymity as in the original research project.

**Questions About the Research?** If you have any questions about your participation in this study or about the intended use of the results, please contact Steve Cairns, York University Doctoral Candidate at [steve71@yorku.ca](mailto:steve71@yorku.ca). If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Cheryl van Daalen-Smith by email at [cvandaal@yorku.ca](mailto:cvandaal@yorku.ca).

**This research has been reviewed and approved by the Research Ethics Board of York University.** If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5<sup>th</sup> Floor, Research Tower, York University (telephone 416-736-5914 or email [ore@yorku.ca](mailto:ore@yorku.ca)).

### **Legal Rights and Signatures:**

Once you have read this consent form and your questions have been answered, you will be asked to electronically consent by answering “yes” if you want to participate in an observation of a meeting for this study: *An exploration of patterns of critical caring among nurses planetary*

*decline*. By signing this electronic consent form, you are stating that you agree freely and voluntarily to participate in this study.

Q1 Consent for research participation Part B: Observation

I consent to allow Steve Cairns to conduct a research observation of a virtual meeting within (name of organization) that I will be attending (date and time to be arranged). I am not waiving any of my legal rights by completing this form.

Yes (1)

No (2)

Q2 Contact Information:

Please insert your full name: \_\_\_\_\_

Q3 Contact Email: \_\_\_\_\_

Q4 Contact Telephone: \_\_\_\_\_

Q5 Thank you for completing this consent form. Once your submitted consent form is reviewed, Steve Cairns will be contact you to confirm your participation in a research observation for this study.

## Appendix 14: Arts-Informed Self-Reflection Letter of Consent

**Name of Participant:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Study Name:** An exploration of patterns of critical caring among nurses facing planetary decline<sup>10</sup>

**Researcher:**

Principal Investigator: Steve Cairns, RN, PhD (c)

Email: [steve71@yorku.ca](mailto:steve71@yorku.ca)

Sponsor: York University

**Purpose of the Research:** To gain a greater understanding of Registered Nurses' experience and perspective in responding to planetary decline in ways that may identify broad implications for the future of nursing education, research, practice and policy.

**What You Will Be Asked to Do in the Research:** The study involves your participating in an arts-informed participant self-reflection to represent how you view yourself as a nurse and the ecological work that you participate in. This will involve the creation of a new or previously made expression of art and describing it in your own words. Permission to publicly share the artistic representation is requested with the intention to inform others about the research (this will be indicated at the bottom of the consent form).

**Risks and Discomforts:** There is a potential risk of harm and/or discomfort in relation to the nature of the topic of planetary decline. There is also a potential risk of harm and/or discomfort if you choose to share publicly your art within this research project. If you are experiencing either harm or discomfort at any point in the arts-informed self-reflection, the activity will be stopped or be adjusted according to your needs. You have the right to not complete any or part of the arts-informed self-reflection at any point during the study.

**Benefits of the Research and Benefits to You:** Sharing your perspectives and experiences can contribute to an expanded knowledge base regarding nursing's engagement with planetary health. It is my hope that you would benefit from a greater appreciation of your environmental activities in relation to nursing practice. This research may be useful for identifying the experience of Registered Nurses responding to planetary decline.

**Voluntary Participation:** Your participation in the study is completely voluntary and you may choose to stop participating at any time and remove your contributions to date. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researcher, York University, or any other group associated with this project.

**Withdrawal from the Study:** You can stop participating in the study at any time, for any reason if you so decide. Your decision to stop participating, or to decline to answer any particular questions, will not affect your relationship with the researcher, York University, or any other group

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<sup>10</sup> The title "An exploration of patterns of critical caring among nurses facing planetary decline" has been retitled "If Not Us, Then Who? A Focused Ethnography Exploring Caring Patterns Among Planetary Health Nurses"



associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

**Confidentiality:** No specific identifying information will be collected during this research project other than your name, telephone, and email as contact information. Only a pseudonym name will be used on any research-related information collected about you as a participant during the course of this study, so that your identity is kept confidential. Your identity will remain only with the Principal Investigator. All information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research unless you specifically indicate your consent to publicly share your name associated with your artistic representation related to this research project.

The researcher acknowledges that the host of the online video conferencing platform (e.g., Zoom, Blackboard, etc.) used for the purposes of meeting to discuss the arts-informed self-reflection, may automatically collect participant data without your knowledge (i.e., IP addresses). Although this information may be provided or made accessible to the researcher, it will not be used or saved without participant's consent on the researcher's system. Further, because this project employs e-based collection techniques, data may be subject to access by third parties as a result of various security legislation now in place in many countries and thus the confidentiality and privacy of data cannot be guaranteed during web-based transmission.

Any material product of the arts-informed self-reflection is to remain the sole possession of the participant and used at their discretion. All paper interview notes will be retained locked in my home office and in a secure cabinet for a period of 3 years, at which time they will be destroyed. All electronic data will be stored indefinitely on an encrypted USB with no personal identifiers. Material data from this study will not be destroyed as ongoing and future research questions may benefit from the data contained within. The data collected in this research project may be used – in an anonymized form - by members of the research team in subsequent research investigations exploring similar lines of inquiry. Such projects will still undergo ethics review by the HPRC, our institutional REB. Any secondary use of anonymized data by the research team will be treated with the same degree of confidentiality and anonymity as in the original research project. Only research staff will have access to this information. Confidentiality will be provided to the fullest extent possible by law.

**Questions About the Research?** If you have any questions about your participation in this study or about the intended use of the results, please contact Steve Cairns, York University Doctoral Candidate at [steve71@yorku.ca](mailto:steve71@yorku.ca). If you have questions about the research in general or about your role in the study, please feel free to contact Dr. Cheryl van Daalen-Smith by email at [cvandaal@yorku.ca](mailto:cvandaal@yorku.ca).

**This research has been reviewed and approved by the Research Ethics Board of York University.** If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5<sup>th</sup> Floor, Research Tower, York University (telephone 416-736-5914 or email [ore@yorku.ca](mailto:ore@yorku.ca)).

**Legal Rights and Signatures:**

Once you have read this consent form and your questions have been answered, you will be asked to electronically consent by answering “yes” if you want to participate in a arts-informed self-reflection for this study: *An exploration of patterns of critical caring among nurses facing planetary decline*. By signing this electronic consent form, you are stating that you agree freely and voluntarily to participate in this study.

**Q1 Consent for research participation Arts-informed Self-reflection**

I consent to participate in an arts-informed self-reflection as part of a research project entitled: An exploration of patterns of critical caring among nurses facing planetary decline, conducted by Steve Cairns. I have understood the nature of this project and wish to participate. By indicating 'Yes' below indicates my consent to participate in the arts-informed self-reflection and follow-up interview. I am not waiving any of my legal rights by signing this form.

- Yes
- No

**Q2 Artistic Representations a) Permission to share images of art**

I consent to the use of images of my artistic representations created or shared during this research project in the following ways (please check all that apply):

	Yes (1)	No (2)
In academic articles (3)	<input type="checkbox"/>	<input type="checkbox"/>
In print, digital and slide form (4)	<input type="checkbox"/>	<input type="checkbox"/>
In academic presentations (5)	<input type="checkbox"/>	<input type="checkbox"/>
In media (1)	<input type="checkbox"/>	<input type="checkbox"/>
In thesis materials (2)	<input type="checkbox"/>	<input type="checkbox"/>

**Q2 Artistic Representations b) Consent to waive anonymity**

I consent to the use of my name in the acknowledgement of my artistic representations in the publications arising from this research (please check all that apply):

	Yes (1)	No (2)
In academic articles (3)	<input type="checkbox"/>	<input type="checkbox"/>
In print, digital and slide form (4)	<input type="checkbox"/>	<input type="checkbox"/>
In academic presentations (5)	<input type="checkbox"/>	<input type="checkbox"/>
In media (1)	<input type="checkbox"/>	<input type="checkbox"/>
In thesis materials (2)	<input type="checkbox"/>	<input type="checkbox"/>

Q3 I wish to remain anonymous in the acknowledgement of my artistic representations in the publications arising from this research.

Yes

No

Q4 Contact Information:

Please insert your full name:

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Q5 Contact Email:

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Q6 Contact Telephone:

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Q7 Thank you for completing this consent form. Once your submitted consent form is reviewed, Steve Cairns will be contact you to confirm your participation in an arts-informed self-reflection for this study.

## Appendix 15: Interview Guide

### **Methodology:** Semi-Structured Interview

*Research Proposal Objective 2* - To explore the journeys, experiences, approaches, activities and priorities of nurses who are engaged in the issues of planetary decline.

*Research Proposal Question 1* - How are nurses involved in planetary health issues experiencing their journey, approaches, activities and priorities for action in relation to the current crisis humanity is facing?

**Setting:** Either in-person or online livestream video (unrecorded).

**Identified Participants:** Registered Nurses

**Recruitment:** Potential research participants will be identified through a combination of network referrals and purposive (selective) sampling of Registered Nurses. Prospective sample participants will be contacted by email with a letter of introduction to the study. Prospective participants will be invited to a telephone conversation to enable introductions, learn about the research study, and ask questions. Together, prospective participants and I will determine if there is congruence between their experience/current involvement in planetary health issues and the research goals/objectives of the study.

### **Procedures:**

#### Semi-Structured Interview Questions

##### *Journey Questions*

**Question 1.** Would you please describe your early experiences of nature and how they came to be. (**Probes:** Describe the relationships/connections with certain people, animals, or places).

**Question 2.** How would you describe your relationship to the environment?

(**Probes:** What does being ecological mean to you? When and how did you form an ecological consciousness?)

**Question 3.** How do you or have you come to experience of planetary decline in your role as a Registered Nurse? (**Probe:** How have those experiences shaped your perspective on caring as a nurse?)

**Question 4.** Would you please describe any challenges you have had as a nurse in terms of issues associated with planetary decline? (**Probes:** What do you struggle with? What stresses do you face?)

##### *Approach Questions*

**Question 5.** What is your perspective regarding the current planetary health issues you face as a nurse? (**Probe:** How do you make sense about what is going on in the world?)

**Question 6.** How has your understanding of the current planetary decline crisis informed your approach to nursing practice?

**Question 7.** What sustains you as a nurse who is engaging in planetary health issues? (**Probes:** Do you draw on a faith/hope/belief system? What relationships sustain you?)

*Activity Questions*

**Question 8.** What are the current planetary health activities that you are participating in? (**Probes:** Why have you chosen those activities? How is your role as a nurse involved, and if not what is the reason(s)? Who do you work with in these activities?)

**Question 9.** What planetary health activities would you like to participate in but cannot? (**Probes:** What are the barriers (structural, social), for doing so?)

*Priorities for Action Question*

**Question 10.** What do you see as priorities for climate and ecological action within the nursing profession? (**Probes:** Related to education, research, practice, and policy. What would you like to see changed within the profession?)

**Study Instruments:**

1. Audio Recording: Zoom H1n Stereo Recorder
2. Fieldnotes

**Analysis:**

1. Interview audio recording will be transcribed as a data set for each of the ten questions and each coded as a unit of analysis.
2. Reflexive thematic analysis used through:
  - a) Repeated cycles of review of the data to identify significant themes that emerge.
  - b) To discover analytical threads and essential insights as potential patterns.
3. A process of peer-review by Dr. Cheryl van Daalen-Smith will provide rigor among identified themes.
4. NVivo 12 will be used to test a variety of theme hypothesis, frequencies of certain actions/behaviours, and support the exploration of new insights within the data.
5. Member check-in will be employed among each RN research participant to validate research participation.

**Estimated Time Commitment:**

- Recruitment to study telephone interview (30 minutes)
- Interview (1 – 1.5 hours)

## Appendix 16: Participant Observation Guide

### **Methodology:** Participatory Observation

*Research Proposal Objective 3* - To observe how ecologically conscious nurses within organizations embody their focus on environmental issues.

*Research Proposal Question 2* - In what ways do/can nurses embody their participation within organizations focused on planetary health issues?

**Setting:** Either in-person or live-stream video (Zoom) meeting, event, or activity of a group or organization that the research participant is involved in.

**Identified Participants:** Registered Nurses (research participants), environmental organizations (affiliated with each of the research participants), organization members attending the meeting/event/activity.

**Recruitment:** Network sampling (snowball) technique will support the purposive sampling of Registered Nurses by distributing a research study email and/or flyer through specified environmental organizations. The method of semi-structured interviews will help establish rapport with research participants for consideration of an observation activity. If the conditions are suitable, an invitation to join a meeting/event/activity of an organization affiliated with the research participant will be negotiated. Specific observation consent will be obtained from each of the research participants, their affiliated organization, and other organization members who are involved in the meeting/event/activity.

### **Procedures:**

- a) Obtain consent.
- b) Attend a meeting/event/activity of a research participant and record observation fieldnotes.
- c) Researcher to reflect on the following Observation Questions:
  1. In what ways do subjects communicate in the group activity in a relational context?
  2. How do subjects contribute to group decision making?
  3. What are the organizational roles that subjects take on in the group activity?
  4. What is the social context of the group activity in which subjects are participating? (Relational embodiment as representations of: power, structural enablers & barriers, people (who's there and who's not there)).
  5. What is the focus of the group activity and how does the subject contribute to, and/or take away from that focus? (Capacity building, overarching goal/target).

### **Study Instruments:**

1. Fieldnotes
2. Journal reflections

### **Analysis:**

1. Fieldnotes will be transcribed as a data set for each of the five questions and each coded as a unit of analysis.
2. Reflexive thematic analysis used through:
  - a) Repeated cycles of review of the data to identify significant themes that emerge.
  - b) To discover analytical threads and essential insights as potential patterns.
3. NVivo 12 will be used to test a variety of theme hypothesis, frequencies of certain actions/behaviours, and support the exploration of new insights within the data.
4. Member check-in will be employed among each RN research participant to validate research participation.

**Estimated Time Commitment:**

Participant Observation (1.5 – 2 hours)

## Appendix 17: Arts-Informed Participant Self-Reflection Guide

### **Methodology:** Arts-informed Participant Self-Reflection

*Research Proposal Objective 4* - To explore how an arts-informed participant self-reflection, by nurses engaging environmental concerns, can provide perspective on nursing's involvement in global and planetary health concerns.

*Research Proposal Question 3.* How do the participants view themselves as nurses caring for planetary health / 'ecological' actions that they are doing within an arts-informed participant self-reflection?

**Setting:** Either in-person or online livestream video (unrecorded).

**Identified Participants:** Registered Nurses

**Recruitment:** Research participants who have completed the semi-structure interview will be invited to participate in an arts-informed participant self-reflection as an opportunity to create a new or previously made expression of art that integrates how they view themselves as a nurse and the environmental concerns that they are participating in. If they agree to do so, participants will be asked to reflect on their description of their art. All research participants will be invited to meet either in-person or by online livestream video to complete a member check-in of the emerging themes. During this meeting, participants who agreed to complete the art activity will be asked to self-reflect on their work.

### **Procedures:**

Arts-informed Participant Self-Reflection Questions:

1. In what way does this art represent the way that you are feeling about nursing engagement in planetary health?
2. Describe for me what guided your (created or chosen) art piece in relation to your journey into planetary health concerns?

### **Meeting Instruments:**

1. Fieldnotes

### **Reporting:**

1. The Arts-informed participant self-reflections were shared through a facilitated Zoom meeting.
2. Each participant shared their work along with a brief reflection.
3. Other participants in the meeting shared comments.
4. Fieldnotes were recorded during the meeting.
5. The arts-informed participant self-reflections were reported on within the general findings section of the dissertation.

### **Estimated Time Commitment:**

Member check-in (30 minutes) and Arts-informed participant self-reflection (30 minutes)



## **Appendix 18: Participant Observation Meeting Summaries**

### **Participant Observation Meeting One:**

PO1 was a monthly national research meeting that involved presentations of nursing research topics related to planetary health. It was well organized with a clear agenda and research presentation. The topic focus of this meeting was a quantitative research report on the effects of airborne particle dispersion patterns among the pediatric population in a localized area. The presenter shared their video image along with a PowerPoint slide show. Research images included background, methodology, results, and discussion. The presenter provided a detailed explanation of the trajectory of exposure events and subsequent pediatric emergency department admissions related to respiratory illness. Attendees asked sophisticated questions focusing on a broad nursing context that led to a discussion for the application of nursing research in terms of population health, health equity, and advocacy. They also asked questions for clarification, citation of resources, and application of results. Participant feedback to the presenter included clarification of acronyms. Further discussion explored health equity in terms of populations rendered vulnerable to airborne exposure events, health advocacy strategy, and future areas of study. To conclude, the facilitator expressed their appreciation for the presenter and attendees and promoted the topic of discussion for the next meeting.

### **Participant Observation Meeting Two:**

PO2 was a bi-monthly regional executive meeting that involved the planning for initiatives and general membership meetings. The focus of this meeting was for executive members to reconnect, provide updates on their executive portfolio activities, and outline priorities. The meeting began with a land acknowledgement and included a five-minute body break as well as a 15-minute meditation activity after one hour. The leader shared a PowerPoint slide show to facilitate discussion about current activities and future opportunities. Polling software Menti.com enabled multiple real-time responses to questions asked by the leader. PO2 was a thoughtfully prepared meeting delivered in a personable and organized manner. Hosted during the evening, the meeting had a casual approach that encouraged everyone to “do what they need to do” to take care of themselves. The leader recognized the members’ competing commitments and encouraged everyone to be aware of workload and avoid burnout with various environmental initiatives in progress. Technology enabled different kinds of participation and the active sharing of ideas throughout the meeting. The meeting concluded with members expressing their appreciation for the inspiring discussion.

### **Participant Observation Meeting Three:**

PO3 was a monthly national committee meeting that involved national and international climate change initiatives. The topic focus of this meeting was to provide an update from the 2021 United Nations Climate Change Conference (COP26). The presenter attended COP26 and reported on their experience. They invited questions that led to further discussion, particularly around the significance of COP26 language commitments calling for a global average temperature limit of 1.5 °C. During a free-flowing part of the discussion, attendees brought forward ideas and information. A representative from another nursing environmental group presented their interest in growing a coalition with other health care provider organizations. The

leader provided a summary that emphasized the need to carry forward the momentum of COP26 for sub-committees to act on. This national committee meeting highlighted nursing involvement in an international political meeting on climate change.

#### Participant Observation Meeting Four:

PO4 was a local interest group that met monthly to plan initiatives and share information. The leader started the meeting with a land acknowledgement. The leader also described the agenda as “flipped” when compared to previous meetings in order to focus attention on the groups action items prior to individual sharing. The leader outlined 16 initiatives underway relating to raising awareness of planetary health. Each member then individually shared a detailed check-in of their activities. The leader summarized member accomplishments, highlighted their skillsets, and showed how their work was coming to the climate crisis from many angles. Further group discussion focused on the strategic goals of increasing membership and building local, regional, and national collaboration among health care provider organizations. The leader welcomed attendees who identified as students and mentioned upcoming events and action items for group members to consider. The leader provided a wrap-up of final thoughts and planning logistics for the next meeting. This local interest group had an energized leader who conveyed a general sense of excitement for getting together. The attendees reciprocated this energy.

#### Participant Observation Meeting Five:

PO5 was a regional interest group that met quarterly throughout the year. The meeting began with a land acknowledgement. The leader provided introductions and invited attendees to speak or post a message in the chat space. The meeting topics included an update on recent work, acknowledging new or returning executive members, planning initiatives related to environmental health, and discussing the interest group's resolutions for an upcoming annual general meeting of their parent organization. The leader used anonymous online polling to facilitate the meeting discussion points. The polling also enabled specific questions about the interests of attendees and what activities they would like to see the group involved in. Attendees had an open discussion on the multiplicity of current initiatives, the time and energy people have, the difficulty with meeting late in the evening, and further idea sharing. The leader shared a video about climate change during the second half of the meeting and the wrap-up included an invitation to get involved by contacting executive members of the group. This regional interest group meeting was well organized using technology to enable new and returning attendees to actively participate. Attendees could see their ideas posted in real time and recorded for future discussion and planning.

#### Participant Observation Meeting Six:

PO6 was a local interest group consisting of both nurses and physicians who met monthly. The leader prepared and distributed a written agenda to members prior to the meeting. The meeting began with a land acknowledgement and each group member was invited to informally share an update of their activities. For part of the meeting, attendees discussed an upcoming strategic planning meeting hosted and funded by a larger health care environmental group with which the physicians were affiliated. The topics of this meeting included an update on a list of local, regional, and national action items with a focus on building collaboration. The discussion was

free flowing among attendees who spoke to current initiatives listed on the agenda and brought forward new ideas. At one point the leader encouraged the group to avoid jumping around from “thing to thing.” One part of the discussion included a description of different groups in the area taking different approaches to planetary health, such as being more radical through direct action. For the next meeting, the group planned to review the pending results of their strategic planning exercise and the drafting of mission/vision statements. This local interest group was the result of an amalgamation of two previously separate groups of local nurses and physicians.

## Appendix 19: Data Display

Data display of themes, sub-themes, categories, and sub-categories identified in interviews, participant observations, and arts-informed participant self-reflections				
Legend: Interviews, Arts-informed participant self-reflections, Participant observations				
Themes	Subthemes	Categories of codes	Subcategories of codes	Focus
Within nature or separate from it: Facing a contradictory paradigm	Reclaiming our sense of belonging within nature	<ul style="list-style-type: none"> <li>Feeling more whole in nature</li> </ul>	<ul style="list-style-type: none"> <li>Early Experiences</li> <li>Relationships of influence</li> <li>Active in nature</li> <li>Connecting to place - land and water</li> <li>Rhythms of nature – food and seasons</li> <li>The Earth as home</li> <li>Art as precious</li> <li>Art as embodiment</li> </ul>	JOURNEYS
		<ul style="list-style-type: none"> <li>What we do to nature we do to ourselves</li> </ul>	<ul style="list-style-type: none"> <li>Innate obligation to care</li> <li>Non-dualistic view – nature as self</li> <li>Being in relation to nature</li> <li>Poems of the mysterious and beautiful</li> <li>Climate grief</li> </ul>	
	Confronting the social and economic paradigm	<ul style="list-style-type: none"> <li>Being an authentic self in one’s personal and professional identity</li> </ul>	<ul style="list-style-type: none"> <li>Lack of a clear mandate within nursing</li> <li>Should I be a nurse</li> <li>Nursing - oppressed group</li> <li>Witnesses to an unfolding crisis</li> <li>A biological rootedness</li> <li>Body breaks</li> <li>Meditations</li> </ul>	
		<ul style="list-style-type: none"> <li>Questioning the system while being part of it</li> </ul>	<ul style="list-style-type: none"> <li>Access to choices - staying/going</li> <li>Climate Change Impacts</li> <li>Populations rendered vulnerable</li> <li>Two sides of one sign</li> </ul>	
	Examining our privileges and vulnerabilities	<ul style="list-style-type: none"> <li>Personal values conflict with professional expectations</li> </ul>	<ul style="list-style-type: none"> <li>Facing an unpredictable future from relative safety</li> <li>Access to nature</li> <li>Having/not having children/raising children</li> <li>Art that is shared and not shared</li> </ul>	
		<ul style="list-style-type: none"> <li>Balancing emotional burden with cognitive dissonance</li> </ul>	<ul style="list-style-type: none"> <li>Expressions of privilege</li> <li>Reckoning of who I am</li> <li>Populations Rendered Vulnerable</li> <li>More-than-humans</li> <li>Tangible end goals</li> <li>Covering over to expressing new</li> <li>Beauty and decay</li> </ul>	

Having a functional environmental consciousness	Awakening and deepening understanding of planetary health	<ul style="list-style-type: none"> <li>Unpacking upstream issues for root causes</li> </ul>	<ul style="list-style-type: none"> <li>Pursuit of progress</li> <li>Disposable culture</li> <li>Colonialism</li> <li>Asking disciplinary questions</li> <li>Asking sophisticated questions</li> </ul>	Approaches
		<ul style="list-style-type: none"> <li>Mobilizing what I can do</li> </ul>	<ul style="list-style-type: none"> <li>Self-directed learning</li> <li>Solving problems</li> <li>Focusing on what I can do</li> <li>Social and economic transitions</li> <li>Being bold, taking hold</li> <li>Seeing and doing</li> <li>Visualizing population health</li> </ul>	
	Building community and broadening nursing practice	<ul style="list-style-type: none"> <li>Communities of like-minded people</li> </ul>	<ul style="list-style-type: none"> <li>Relating to like-minded people</li> <li>Connecting with others</li> <li>Networking with others</li> <li>Sharing ideas</li> <li>Inclusive to new people</li> <li>Friendships</li> </ul>	
		<ul style="list-style-type: none"> <li>Redefining practice - broadening what's important</li> </ul>	<ul style="list-style-type: none"> <li>Shifting career</li> <li>Changing traditional roles</li> <li>Facilitating change</li> <li>Thoughtful meeting preparation</li> </ul>	
	Harvesting good energy and sustaining oneself	<ul style="list-style-type: none"> <li>Appreciating and sharing hands-on-earth approaches</li> </ul>	<ul style="list-style-type: none"> <li>Land acknowledgement</li> <li>Robust non-nursing activities</li> <li>Sustainable Communities</li> <li>Seasonal foods</li> <li>Reciprocated energy</li> </ul>	
		<ul style="list-style-type: none"> <li>Welcoming successes, celebrating what's possible</li> </ul>	<ul style="list-style-type: none"> <li>Connecting with students</li> <li>Spirituality</li> <li>Connecting practice to nature</li> <li>Laughter</li> <li>Opportunities for involvement</li> <li>Accomplishments</li> <li>Joy of small interactions</li> <li>More-than-humans come for help</li> </ul>	
	Taking stock, letting go, and regrouping	<ul style="list-style-type: none"> <li>Consolidating what is working and what is not</li> </ul>	<ul style="list-style-type: none"> <li>Practical application of time, energy, and impact</li> <li>Meet conflicting ideas</li> <li>Knowing what sustains</li> <li>Do what you need to do</li> <li>Recycling, developing ideas</li> </ul>	
		<ul style="list-style-type: none"> <li>Adjusting expectations and letting some things go</li> </ul>	<ul style="list-style-type: none"> <li>Pushing the envelope</li> <li>Basic needs</li> <li>Retreating when needed</li> <li>Self-care</li> <li>Love and letting go</li> <li>Seasonal guides</li> </ul>	

Placing shield up and heart open towards challenge	Sustaining resiliency to do the work	<ul style="list-style-type: none"> <li>Looking for opportunities through kindness and caring</li> </ul>	<ul style="list-style-type: none"> <li>Advocacy within health systems</li> <li>Finding ways into conversations</li> <li>Representing regionally</li> <li>Community-based groups</li> <li>Working from different angles to same problems</li> <li>Thresholds for joy</li> <li>Pushing through challenges</li> </ul>	Activities
		<ul style="list-style-type: none"> <li>Stepping outside one's comfort zone</li> </ul>	<ul style="list-style-type: none"> <li>Consultations with Indigenous leaders</li> <li>Political action</li> <li>Policy writing</li> <li>Story telling</li> <li>Connecting with courage</li> <li>Asking questions</li> <li>Private vs public art</li> </ul>	
		<ul style="list-style-type: none"> <li>Reconciling public facing activities and protecting oneself</li> </ul>	<ul style="list-style-type: none"> <li>Leading practice change</li> <li>Political processes</li> <li>Stretched thin</li> <li>Lack of flexibility</li> <li>Fear of breaking law</li> <li>Crossing a line – context of images</li> <li>Protective of my energy</li> </ul>	
	Overcoming barriers to engagement	<ul style="list-style-type: none"> <li>Closing the ecological knowledge gap in nursing education</li> </ul>	<ul style="list-style-type: none"> <li>Nature immersion</li> <li>Curriculum development ecology</li> <li>Nursing workflow issues</li> <li>Using nature in healing</li> </ul>	
		<ul style="list-style-type: none"> <li>Making workflow decisions to include frontline nurses</li> </ul>	<ul style="list-style-type: none"> <li>Healthcare structures</li> <li>Incentivising the right policies</li> <li>Underlying issues left behind</li> <li>High level conversations</li> </ul>	
		<ul style="list-style-type: none"> <li>Restructuring ecologically counterproductive nursing practices</li> </ul>	<ul style="list-style-type: none"> <li>Knowledge to practice limitations</li> <li>Alienation from nature</li> <li>Clinical context reductive</li> <li>Challenging a human centered nursing lens</li> </ul>	



Embracing nursing's place in planetary health	Finding our voice	<ul style="list-style-type: none"> <li>Confidence in knowing that human health is planetary health</li> </ul>	<ul style="list-style-type: none"> <li>Increase connectedness (nurses)</li> <li>Presentations, conferences, newsletters, publications</li> <li>Nature is outside and inside</li> </ul>	Priorities
		<ul style="list-style-type: none"> <li>Clear overarching mandate for planetary health within nursing</li> </ul>	<ul style="list-style-type: none"> <li>Decrease greenhouse gas emissions</li> <li>Build resiliency (population)</li> <li>Increase involvement (nurses)</li> <li>Sense of urgency</li> </ul>	
	Leveraging our superpower	<ul style="list-style-type: none"> <li>Respect for nurses in society opens doors</li> </ul>	<ul style="list-style-type: none"> <li>Reputation of nurses – trust and credibility</li> <li>Ground swell of support</li> <li>Build bridges of opposing views</li> <li>Art as an expression of who I am</li> </ul>	
		<ul style="list-style-type: none"> <li>Facilitation skills and leadership</li> </ul>	<ul style="list-style-type: none"> <li>Adapting new ways of doing things</li> <li>Multi-pronged approach</li> <li>Using story to move people</li> <li>Meeting facilitation</li> <li>Amplify the positive</li> <li>Mobilizing technology</li> <li>Art to inform reflection</li> </ul>	
		<ul style="list-style-type: none"> <li>Planetary nursing at scale locally, nationally, globally</li> </ul>	<ul style="list-style-type: none"> <li>Build Resiliency in Population</li> <li>Increase Awareness in Nursing</li> <li>Increase nurses involvement</li> <li>Using our voice</li> </ul>	