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NURSING AND ENVIRONMENTAL SUSTAINABILITY: PIONEERS OF GREEN TRANSFORMATION IN HEALTH

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Review

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Abstract

Despite providing services to protect and improve public health, healthcare facilities have negative impacts on human welfare and the environment due to their contribution to greenhouse gas emissions and ecological footprint. This highlights the urgency of implementing sustainable practices in healthcare facilities. As frontline healthcare workers,nurses make up the largest proportion of all healthcare professionals worldwide and play an important role in reducing the environmental footprint of healthcare, achieving human well-being goals and advocating for sustainable practices within healthcare organizations. Sustainable nursing practices aims to provide good care with minimal harm. It prevents pollution and advocates for clean and productive ecosystems. It also promotes the sustainable use of natural resources. Despite the existing knowledge on this topic, addressing the critical roles and responsibilities of nurses in environmental sustainability, assessing their contributions to green transformation processes in healthcare organizations and the barriers they face are important for improving sustainable healthcare practices.

Keywords: Environmental Sustainability, Nursing, Sustainable Nursing Practice

Özet

Sağlık kurumları, toplum sağlığını koruma ve iyileştirmeye yönelik hizmet sunmasına rağmen sera gazı emisyonlarına katkısı ve ekolojik ayak izi nedeniyle insan refahı ve çevre üzerinde olumsuz etkilere sahiptir. Bu durum sağlık tesislerinde sürdürülebilir uygulamaları hayata geçirmenin aciliyetini vurgulamaktadır. Ön saflardaki sağlık çalışanları olarak hemşireler, dünya çapındaki tüm sağlık profesyonellerinin en büyük bölümünü oluşturur ve sağlık hizmetlerinin çevresel ayak izini azaltmada, insan refahı hedeflerine ulaşmada ve sağlık kuruluşları içinde sürdürülebilir uygulamaları savunmada önemli bir rol oynarlar. Sürdürülebilir hemşirelik uygulamaları, minimum zararla iyi bakım sağlamayı amaçlar. Kirliliği önler, temiz ve üretken ekosistemleri savunur. Aynı zamanda doğal kaynakların sürdürülebilir kullanımını teşvik eder. Bu konu hakkındaki bilgiye rağmen, hemşirelerin çevresel sürdürülebilirlikteki kritik rollerini ve sorumluluklarını ele almak, sağlık kuruluşlarındaki yeşil dönüşüm süreçlerine katkılarını ve karşılaştıkları engelleri değerlendirmek, sürdürülebilir sağlık uygulamalarını iyileştirilmek için önemlidir.

Anahtar Kelimeler: Çevresel Sürdürülebilirlik, Hemşirelik, Sürdürülebilir Hemşirelik Uygulamaları

1. Introduction

According to the World Health Organization (WHO, 2023), the Earth is warming every decade due to the increasing concentration of greenhouse gases, resulting in more variable hydrological events such as melting glaciers, heavy rainfall and floods, and meteorological events such as tropical storms and hurricanes. Climate change affects the environment, natural systems and social conditions, including health systems, and can reverse the development of public health (Turzáková et al., 2024). The impact of climate change on human society is a cause for concern. Governments worldwide emphasize the need for urgent action to adapt to changing environmental conditions as a result of climate change and to minimize the devastating impacts of this change (Luque-Alcaraz et al., 2024; Turzáková et al., 2024) and implement various measures aimed at reducing the environmental impact of daily activities and minimizing the ecological footprint (Fadhullah et al., 2022), These practices are formulated as environmental regulations in line with the Sustainable Development Goals (Luque-Alcaraz et al., 2024).

The healthcare sector is highly connected to activities that emit pollution into air, water and soils and makes a significant contribution to our collective ecological footprint, accounting for 1-5% of global carbon emissions, depending on which indicator is taken into account (Lenzen et al., 2020). Sustainability of health services is becoming more urgent due to global health crises, climate change, resource scarcity and the growing burden of chronic diseases (Zanobini, 2024). Nurses, who constitute the largest group of the health workforce, serve to protect community health and well-being as well as promote social justice. Nurses are therefore expected to respond to the negative impacts of healthcare on the environment and human health through sustainability of interventions and responsible use of materials, and this is important in achieving the Sustainable Development Goals (Álvarez-Nieto et al., 2022).

2. Environmental Sustainability in Healthcare

Human activities, such as industrial processes and the burning of fossil fuels and deforestation, have led to climate change and a rapid increase in greenhouse gas emissions. This has triggered a series of environmental responses, including rising global temperatures, more frequent and severe weather events, rising sea levels and the degradation of ecosystems. As a result, the consequences of climate change are far-reaching (Okada & Gray, 2023) and its impacts on human health, physical infrastructure, resource security and supply chains put health systems at serious risk (Weaver et al., 2010).

Sustainability represents a holistic approach to protecting the future of our planet. It encompasses environmental, economic and social sustainability (Kang, 2018). These three key elements are interconnected and are crucial in improving overall quality of life and ensuring a balanced and lasting development model (Subekti & Putri, 2020). Morelli (2013), argues that instead of a reciprocal relationship between these three aspects of sustainability, a hierarchical model should be provided due to the high dependence of economic and social sustainability on the environment, and that it is difficult or even impossible to think of a sustainable society or economy without having a sustainable environment.

Sustainability, defined as the ability of businesses to meet future needs without compromising their own or others' capabilities while meeting short-term financial needs (Ndereyimana, 2022), is seen as a critical issue in healthcare, involving the long-term protection of the health and well-

being of the human population. This includes ensuring that health systems are not only effective now but also able to meet the needs of future generations (Pencheon, 2014).

Hazardous and carcinogenic substances used in healthcare contaminate waterways and food chains due to the high consumption of clean water, energy and materials (Topf, 2005). The need for environmental sustainability in healthcare has become imperative for the overall sustainability of healthcare services in the future due to increasing demand and limited resources (Preux & Rizmie, 2018). Sustainable healthcare as a concept aims to improve healthcare delivery and outcomes by taking into account the environmental impacts of healthcare (Tun, 2019). The significant contribution of healthcare to environmental degradation through carbon footprint and waste generation underlines the importance of focusing on environmental sustainability within the sector (Cimprich et al., 2019). To meet the Sustainable Development Goals 2030 agenda, defined as the new goals of the global agenda, healthcare needs to shift towards more environmentally sustainable practices that will also influence clinical decision-making (Dal Mas, 2024). Sustainable healthcare systems focus not only on environmental aspects but also on quality improvement. Health professionals' initiatives promote quality and provide better healthcare. A study reveals that the increased frequency of sustainable healthcare systems can only be achieved through the initiatives of healthcare providers (Sharma & Tripathi, 2022). Accordingly, all healthcare providers, including doctors, nurses and managers, should perceive environmental health as an integral part of human health and have the knowledge, skills and confidence to reduce the environmental footprint of healthcare and educate their patients and communities (Huang, 2024).

Addressing the environmental impacts of healthcare facilities, especially in the context of events such as the COVID-19 pandemic, requires sustainable practices and various strategies to minimize the environmental footprint and create a healthier environment for patients and healthcare workers and society at large (Alam et al., 2024): sustainable supply chain management (Elabed et al., 2021), use of modern technologies (Akanmu et al., 2022), performance management (Lennox et al., 2018), resource efficiency and environmentally friendly waste management. By implementing sustainable initiatives, healthcare organizations can achieve cost savings, increase operational efficiency, improve financial performance (Abaku & Odimarha, 2024), increase job satisfaction among healthcare professionals (Hoxha et al., 2024), and gain

competitive advantage through better performance (Vaishnavi & Suresh, 2023). It can also lead to improved patient outcomes and experiences (Hoxha et al., 2024).

3. Nursing Science and Environmental Sustainability: Nurses' Roles and Responsibilities

As frontline healthcare professionals, nurses account for approximately 60% of all healthcare professionals worldwide and are considered one of the most trusted professions in the world (Butterfield, 2021). Therefore, nurses have a unique opportunity to reduce the environmental footprint of the healthcare system, achieve human well-being goals, and advocate for sustainable practices within healthcare organizations (Álvarez-Nieto et al., 2022). However, little is known about environmental responsibility in nursing clinical practice and how it is promoted (Kallio et al., 2020).

Environmental responsibility is value-based and related to nurses' professional ethics (Kangasniemi et al., 2013) and social responsibility to protect the environment on which humanity depends (Peres et al., 2014). Environmental responsibility in nursing aims to harm the environment as little as possible and to provide good care in this way (Kallio et al., 2018). In the clinical work of nurses, environmental responsibility focuses on the optimal and efficient use of materials and energy (Kangasniemi et al., 2013; Kallio et al., 2018). In this way, pollution is prevented, a cleaner and more productive ecosystem is advocated, and sustainable use of natural resources is promoted (Topf, 2005). All these actions can help nurses to play an important role in promoting sustainability in healthcare and reduce the impact of negative contributions to the environment due to the environmental footprint of healthcare on patient outcomes (Turzáková et al., 2024).

Nurses' awareness of the negative impacts of healthcare on the environment and their leadership, particularly through initiatives such as Green Teams, are vital to minimize hazardous waste in healthcare settings and promote sustainable healthcare practices (Anåker & Elf, 2014). The aim of Green Teams is to increase awareness and knowledge among hospital staff regarding the impact of healthcare facilities on the environment and to develop strategies to reduce the negative impact of healthcare institutions on the environment. Green Teams first emerged in the United States of America and although these teams include employees from different professional groups, they are mostly led by nurses. Nurse leaders in these teams provide training, support and resources to the staff of the organization, so that sustainable practices are adopted by all

employees (Luque-Alcaraz et al., 2024). In this way, all nurse employees contribute to initiatives to reduce the effects of climate change on public health. All these play an important role in achieving sustainable health goals (Leal Filho, 2021).

The International Council of Nurses (ICN, 2018), in its position statement on “Nurses, climate change and health” recognizes the importance of integrating "the concept of sustainability in nursing practice as well as knowledge about climate change into nursing curricula and post-registration continuing education". In addition, Felicilda-Reynaldo et al. (2018) emphasize in their study that nursing students need to be knowledgeable about the subject in order to develop critical thinking skills on issues related to climate change and sustainability in their practice. This shows that sustainable practice skills can be gained through education.

Research has shown that nurses with high levels of environmental awareness are more likely to engage in sustainable activities (e.g. energy saving, effective use of hygiene materials, waste reduction, and environmentally conscious purchasing decisions) (Kangasniemi et al., 2013). However, sustainability in healthcare organizations has not been emphasized enough (Nyholm et al., 2018). Nonetheless, the World Health Organization, in its Global Report on Health and Climate Change (WHO, 2021), stated that the preparations of health institutions for the effects of climate change on human health are not sufficient. In this direction, managers and policy makers have great roles and responsibilities.

4. Barriers to Sustainable Nursing Practice

With concerns about the global climate crisis, it has become imperative for nurses tointegrate environmentally responsible interventions into daily routines in health care settings. Sustainable nursing practices are important in maintaining environmental health and contribute to improving patient outcomes and providing quality and safe care. However, in order for nurses to assume this critical role, they must have sufficient environmental awareness and be equipped with the necessary knowledge, skills and competence to reflect sustainable practices in their daily activities (Aronsson et al., 2020).

Through evidence-based interventions, nurses can address challenges in various domains in healthcare settings. This is critical in contributing to sustainable improvements in patient care. However, there are barriers to doing so and these barriers have been identified in the literature; inadequate management (Kalogirou et al., 2021) and educational support (Álvarez-Nieto et al.,

2018), limited resources (Stacey et al., 2006), nurses' lack of confidence in advancing sustainability initiatives (Roden & Lewis, 2021), insufficient workforce (Faltas, 2022), lack of time and heavy workload (Aronsson et al., 2020). To overcome these barriers, nurses need support through educational programs, resources and policies.

5. Conclusion

In conclusion, nurses are pioneers of green change in healthcare, playing a key role in raising awareness of climate change and promoting environmentally sustainable practices in healthcare. Their leadership, advocacy, and active engagement are critical for creating environmentally sustainable health systems that prioritize both human well-being and environmental health. In this direction, in order for nurses to use the understanding of sustainability in their care practices, the nursing education process should provide them with knowledge, attitudes and skills related to sustainability (İlaslan & Orak, 2023). In addition, health service organizations and nursing management should support nurses at all levels through policies, training programs and resources in order to implement sustainable interventions. Managers may not be very knowledgeable about these issues. Concrete and practical solutions can be combined with professional conferences, shared leadership positions, and graduate leadership programs.

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Conflicts of Interest

There is no financial conflict of interest with any institution, organization, or person regarding article. It has not been presented as an oral / written paper in any congress / symposium etc. It is not produced from a thesis study. Ethics committee permission was not obtained as it is a review article.

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