

Review

Practices Pursuing the Sustainability of A Healthcare Organization: A Systematic Review

Alla Mostepaniuk ^{1,*} , Turgay Akalin ² and Mohammad Reza Parish ³

¹ Faculty of Economics and Administrative Sciences, Final International University, North Cyprus via Mersin 10, Kyrenia 99320, Turkey

² Vocational School of Health, American University of Cyprus, North Cyprus via Mersin 10, Kyrenia 99320, Turkey

³ Faculty of Health Sciences, Final International University, North Cyprus via Mersin 10, Kyrenia 99320, Turkey

* Correspondence: a.mostepaniuk@gmail.com

Abstract: This study aims to investigate efficient practices pursuing the sustainability of healthcare organizations, as the healthcare sector and its activities affect different spheres of social life, the economy, and the state's performance, highlighting the importance of this subject. To achieve the aim of this study, a systematic review methodology was applied, and the data were obtained from 67 papers published within the scope of the two most cited databases: Scopus and Web of Science. As a result of the analysis, the following efficient practices were suggested to improve the sustainability of healthcare organizations: improvements in management practices, leadership practices, manager selection, the engagement of clinicians in the management, the promotion of organizational culture and management style, the promotion of virtual health communication, environmental supply chain management, rational resource consumption, and waste management.

Keywords: sustainability; healthcare; green technologies; waste management; energy consumption



Citation: Mostepaniuk, A.; Akalin, T.; Parish, M.R. Practices Pursuing the Sustainability of A Healthcare Organization: A Systematic Review. *Sustainability* **2023**, *15*, 2353. <https://doi.org/10.3390/su15032353>

Academic Editor: José Carmelo Adsuar Sala

Received: 28 December 2022

Revised: 23 January 2023

Accepted: 25 January 2023

Published: 28 January 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Currently, the need to overcome the negative consequences of global issues such as the aging of the population, climate change, environmental degradation, discrimination, and inequalities, as well as to follow the 2030 Agenda for Sustainable Development, which was adopted by all United Nations Member States in 2015 [1], has put increased pressure on all actors of the economy, but specifically on the organizations of the healthcare sector. Thus, healthcare organizations' activities are extremely important as they have a direct impact on the process of reaching the key 17 Sustainable Development Goals (SDGs) in general and specifically regarding issues such as good health and well-being, gender equality, clean water and sanitation, and affordable and clean energy.

Additionally, the COVID-19 pandemic has highlighted the importance of the highly effective healthcare sector and its impact on the overall social and economic well-being of the population during unpredicted crises [2–4]. Thus, the uncertain macroeconomic environment and the constant willingness of individuals to improve their well-being has constantly put double pressure on the healthcare sector, forcing them to meet the needs and expectations of all economic actors, such as individuals, businesses, and the state [5]. Consequently, there has been a rise in research focusing on the potential of the healthcare sector to reach the SDGs by maintaining sustainability practices.

Currently, the sustainability of an organization is seen as a way of doing business, which includes three dimensions: environmental, social, and economic [6]. Thus, implementing environmentally friendly (green) technologies, reducing waste and harmful emissions, recycling and reusing resources, and increasing the awareness of society about environmental issues are generally seen as required components of environmental sustainability. Social sustainability is determined by providing and protecting human rights, fighting against discrimination and unfair attitudes towards individuals, providing equal

access to public goods and services for all individuals, and activities aimed at forming social capital and networks within the community. The economic sustainability of an organization is considered a way to simultaneously maintain a high level of economic development and living standards, with the adoption of new environmentally friendly technologies, reduction of energy use and waste, and fighting against poverty and other economic issues within the community.

Therefore, this study aims to examine the mechanisms by which healthcare organizations can contribute to achieving the SDGs by improving and maintaining organizational sustainability.

2. Materials and Methods

The research was conducted with the implementation of the systematic review methodology to achieve the aim of the paper [7], as the study is devoted to filling in the gap in the existing literature by determining, analyzing, and summarizing the previously obtained results regarding the efficient mechanisms of shifting towards a sustainable way of organizing and managing healthcare organizations' activities, which in turn leads to reaching the SDGs. Additionally, recent papers have suggested studying organizations' social, economic, and environmental practices that lead to an increase in the overall level of sustainability [8–12].

Thus, the review was conducted to identify, analyze, and summarize the previous results presented in the existing literature and to suggest a range of efficient practices for healthcare organizations that will ensure the sustainability of an organization itself and the future attainability of the SDGs in particular.

This research was conducted according to the stages suggested by Fisch and Block [13]:

Stage 1. Selecting the benchmarks: published papers from various journals, papers in English, and peer-reviewed journal papers.

Stage 2. Secondary data were collected from papers published within the scope of the two most cited databases: Scopus and Web of Science. The search of papers was performed by the keywords "sustainability" and "healthcare," the time frame was limited within 2018–2022 to capture the latest and the most relevant practices implemented by healthcare organizations under the current social and economic circumstances. Consequently, 1032 papers were identified.

Stage 3. Manual content analysis of all the papers found was performed following the requirements of PRISMA to avoid subjectivity [14]. A PRISMA flow diagram is shown in Figure 1.

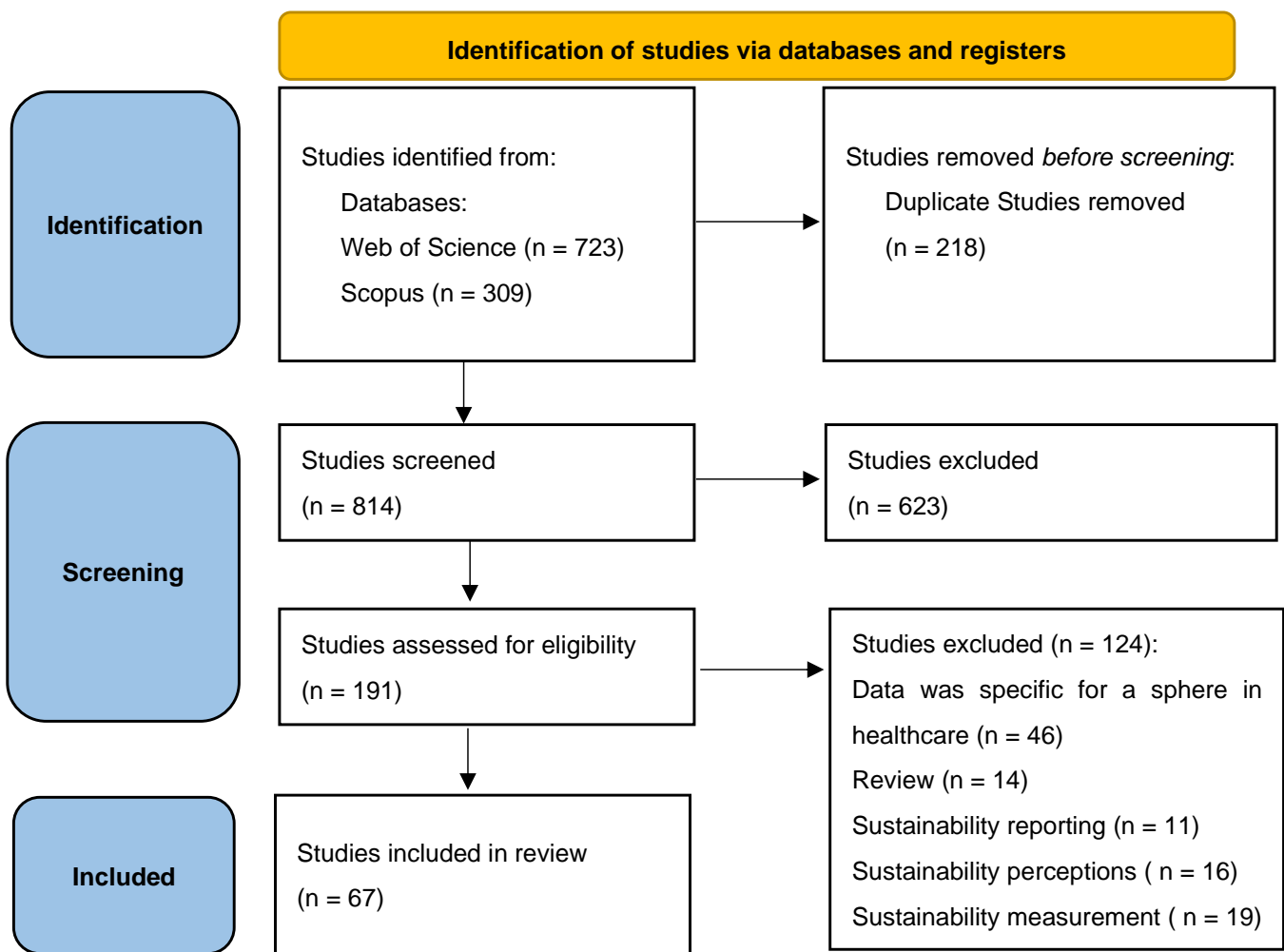


Figure 1. PRISMA flow diagram. Source: own illustration based on [15].

The title screening allowed the exclusion of duplicate papers, and content analysis was performed to exclude papers that did not contain the necessary information about the practices implemented by healthcare organizations and their impact on the level of sustainability. Review papers were also excluded as they did not empirically prove the efficiency of organizational activities. Consequently, 67 papers were identified as datasets and included in the systematic review. Appendix A provides the complete list. It should be mentioned that among the analyzed studies, 11 were conducted in Italy, 4 in China, 4 in Spain, 4 in the United States of America, 4 in the United Kingdom, and 4 in the United Arab Emirates; thus, the current study includes the latest scientific contributions of various authors around the globe (Figure 2).

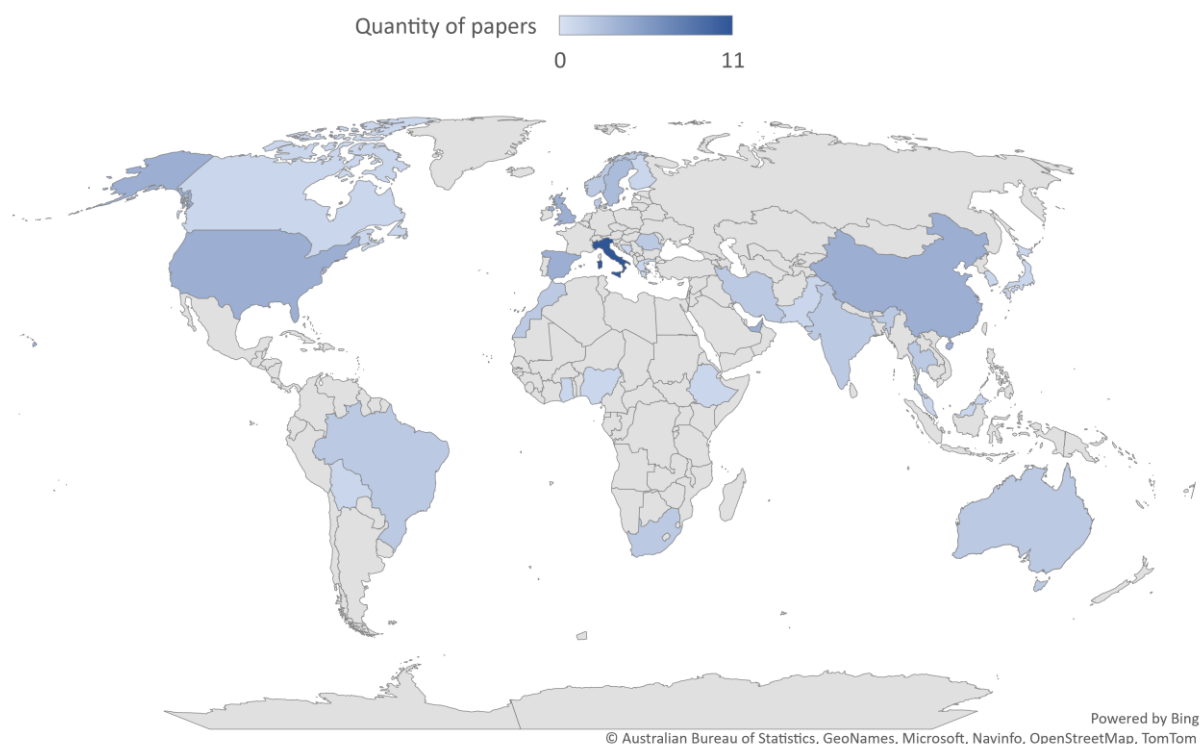


Figure 2. Geographical location of the analyzed studies.

Stage 4. Based on the analysis of secondary data obtained from the included papers, the common efficient and applicable practices of healthcare organizations aiming at achieving sustainability were determined.

Stage 5. The obtained results and previous findings were discussed and controlled, and practical recommendations and suggestions for further studies were provided.

3. Results and Discussion

3.1. Sustainability

The concept of sustainability was introduced and began its path in theory and policy development and managerial practice around the world as the result of the publication of “Our Common Future” report in 1987 by the United Nations [16]. According to the report, sustainable development is defined as development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” [16]. It should be mentioned that this suggested approach recognizes that the efficient usage and distribution of natural resources are the key conditions for achieving sustainability in general, ensuring continued human existence and the ability of future generations to satisfy their needs. Thus, sustainability is seen as a method of current production and consumption that will allow progressive development by allocating finite resources [16–20].

Furthermore, scientists and practitioners have suggested the following activities to achieve sustainability: using less harmful and damaging technologies of production, maintaining the living standards and well-being at the lowest acceptable level to minimize the overall scale of production and consumption; thus, using less finite natural resources, introducing and implementing environmentally friendly technologies, green building, economically driven environmental regulations, and related economic incentives [17,21–24].

It should be mentioned that with the further development of the sustainability concept as a response to the constant modifications of the methods of doing business and the overall public behavior and awareness concerning the potential harm of their activities on the environment, a new approach to contemporary sustainability was suggested in 1999 [25]. The new version of sustainability adds the following issues such as ecosystem viability, social justice and fairness, the social–ecological system, a satisfying level of livelihood and

normativity, use-inspired knowledge generation, the concepts of tradeoffs, resilience, risk and vulnerability, reducing harm, and equity dominance [22,24,26–28].

Contemporary sustainability focuses on different parts of the environment as a system rather than analyzing it as a whole. Additionally, the approach highlights the importance of the symptoms rather than the causes of unsustainability, such as technological, political, social, and economic changes. However, as was proved already, the efficiency of following this approach to determine sustainability is limited, as evidenced by some negative outcomes of formally implemented and declared environmentally friendly activities and projects, which can lead to greenwashing and other unforeseen harmful impacts on nature [17,29,30].

Thus, because of some limitations of the previously mentioned approach of determining sustainability, a new updated approach was developed by scholars as the regenerative stage of sustainability as a concept, which includes the overall view and paradigm shift for sustainability [17,21,31,32].

From a regenerative perspective, sustainability is seen as a holistic worldview that provides the ability to adapt and integrate paradigms, where the key element is the system of humans and the rest of life, and each member of the system has its role and place in the individual-to-global system according to the living system principles of wholeness, change, and relationships [17,18,26,32–34].

Moreover, sustainability is seen through its creators, such as society, and cocreators, such as stakeholders, who follow their beliefs, social and ethical norms, personal interests, rules, and regulations to determine the level of sustainability [9,35–38]. Additionally, it should be mentioned that the main factors affecting the overall attitude and behavior towards nature are not constant, but are being constantly modified to increase the level of health and well-being under continuous local and global economic, social, technological, and environmental changes [31,39–41]. Thus, to maintain higher levels of health and well-being and ensure continued sustainability, all members of the human–nature system should develop and implement the following principles of interaction: adaptation, self-organization, evolution, rational decision making, optimal land, resource use, food system security, cultural practices, lifestyle, and behavioral patterns that support all mutually beneficial interactions among the elements of the system [42–44]. Thus, sustainability is seen not as a fixed goal but as a constantly developing and modernizing living system that exists under uncertain conditions.

3.2. Improvements in Management Practices

The current scientific literature on efficient management systems in the healthcare sector shows a variety of key factors that directly or indirectly affect the overall sustainability of an organization. Thus, it has been proven that management spending has a positive and direct relationship with the level of performance of medical organizations; more specifically, increased spending reduces the waiting time for patients. Moreover, studies have found evidence that medical performance also improves with an increase in management expenditures [8,45–47]. Therefore, improvements in management practices are positively associated with the mortality level and overall financial performance, measured as income per bed. At the same time, it has been proven that the use of lean management practices positively affects the overall efficiency of health organizations through improvements in productivity and quality [48–54].

It should be mentioned that, taking into account the specifics of healthcare organizations, the role of clinicians in management processes is crucial, as they are the ones who determine the needs and related expenditures of an organization [55–58]. Thus, clinicians should be present on the board and be involved in all management-related processes, such as planning, budgeting, organizing, staffing, and controlling.

Additionally, from the sustainability performance perspective, following the principles of green and environmentally oriented policies, adopting modern information technologies, developing and further implementing green plans and policies, assuring the awareness of staff

about environmental issues, and allocating various resources towards environmentally oriented practices are seen as a prerequisite of an organization's sustainability in general [10,59–64].

3.3. Leadership Practices

Similarly, studies on leadership have concluded the existence of a positive relationship with the performance of health organizations. In this context, it should be mentioned that leadership differs from management practices, as management practices include planning, budgeting, organizing, staffing, and controlling [65]. Meanwhile, leadership responsibilities and processes are aimed at problem solving, directing, and motivating employees. Additionally, leaders themselves, by following different techniques, can modify and stimulate the behavior and performance of employees, making the organization itself more efficient and sustainable. It has also been proven that leadership is positively associated with individual and group satisfaction, retention, and individual and group performance [66–70]. Specifically, it should be mentioned that one characteristic of a leader that is seen as the most determining is leadership quality or “engaging with others,” which is a significant predictor of overall organizational performance. Thus, leadership through adequate problem-solving and directing techniques, as well as by sharing knowledge and providing an example and patterns of behavior related to environmental and social issues for employees, positively affects the level of sustainability of an organization [71,72].

3.4. Manager Selection

Additionally, there are numerous managers' and leaders' characteristics studied in the current scientific literature with respect to their relationship with the level of performance and efficiency of an organization. The commonly used characteristics are as follows: background, education, experience, career, training history, religion, nationality, personal social networks, and personal linkages. Thus, according to the results, health organizations with clinically qualified managers have better managerial practices and higher performance in general [73,74]. At the same time, studies have shown that the previous experience and specialization of managers are positively associated with the level of managerial performance in general [75], meaning that managers who previously worked in health organizations and have a medical background are more likely to reach a higher level of managerial performance. In the context of sustainability, it should be mentioned that the level of sustainability of an organization depends on the personal characteristics of managers.

3.5. Engaging Clinicians in the Management

While studying the practices that ensure organizational sustainability, it should be stated that specializations of managers have a direct impact on the level of performance of an organization; in particular, a doctor leader or doctor manager is more likely to organize the processes in a way that will increase the medical performance of an organization. However, there is a probability that managers without any medical background but with previous successful managerial practices will be able to increase the overall efficiency and financial performance of an organization [76]. Additionally, studies have proved that the higher the level of doctors' involvement in managerial processes, the higher the level of medical and overall performance. Thus, doctors' engagement is a vital precondition for an efficient and sustainable healthcare organization [77–79]. Doctors' engagement in managerial processes can be achieved in a few ways: as a positive and active contribution, supporting and encouraging high-quality services, and involvement in innovations. Furthermore, doctors' engagement ensures a higher level of sustainability through the following positive outcomes: reduced patient mortality rates, fewer harmful accidents, better financial performance and care quality, improved collaboration culture, better interpersonal relations, work satisfaction, and trust [79].

3.6. Promotion of Organization Culture and Management Style

Numerous studies have been conducted to determine the organizational culture and management style that will ensure a high level of performance, and consequently, the sustainability of an organization. Thus, it has been proven that highly efficient health organizations follow a transactional approach to leadership rather than a charismatic one, and the management processes include strategic planning, budgeting, and business planning [80,81]. Besides these differences, healthcare organizations with a higher level of sustainability share the same organizational values and goals, senior management involvement, broad staff presence, advanced communication and coordination among employees, problem solving, and learning approaches [82–87].

3.7. Promotion of Virtual Health Communication

Currently, using social media in the healthcare sector provides a tool for communication among the public, patients, and health professionals about health issues that lead to potential improvements in health outcomes. In addition, as a tool of communication, social media encourages different individuals to collaborate and participate in social interactions, which further leads to expanding access to opportunities in healthcare [88,89].

To study the overall effect of social media on organizational sustainability in detail, it should be mentioned that the main goals of using different means of communication, specifically social media applications, are to increase interactions and encourage facilitating, sharing, and obtaining healthcare information. As a rule, social media and other virtual platforms are used to obtain the required information or advice regarding the health issues of individuals, family members, and friends. At the same time, patients can share their online consultations with doctors, their personal experiences with the health institution, doctors, and treatment methods, and their efficiency [90–94], thus making social media a tool for forming the overall image and reputation of an institution and its staff in particular. Similarly, health professionals can use social media to provide online consultations and communicate with their patients, which reduces the costs of obtaining professional advice and allows for a prompt reply in urgent and risky health conditions that would not be possible using traditional means of communication between patients and professionals.

While analyzing the impact of social media on the efficiency in the healthcare sector, the main benefits should be discussed, the most important among them being the accessibility and widening of the access to health information for different groups of the population without respect to their background, educational level, income level, ethnicity or nationality, compared to the accessibility of information received directly from healthcare institutions in the traditional way [89,95–98]. This leads to the elimination of health disparities among populations. Next, the supportive effect should be mentioned, as patients with different illnesses can receive social and emotional support, encouragement, motivation, and shared experiences from other users on social media [92,99–101], thus increasing the overall level of satisfaction of patients. Despite having a positive influence, social media as a tool of communication has some limitations, as this method of obtaining and sharing information is considered informal and not regulated; thus, it leads to spreading information of different quality and consistency [89,90,102–105]. There is a way to solve this issue, specifically by adding reputable and accurate information to social media resources that can motivate users to double-check the obtained information with other sources [90,106], thus minimizing the probability of obtaining incorrect information.

In determining the impact of the use of social media on the sustainability of an organization in the healthcare sector, it should be mentioned that the results of previous studies are mixed, as the social component of the information accessed from social media can lead to some positive changes in the health status of the population, but the publishing unreliable information makes the overall social impact unpredictable. Thus, the usage of information provided by the official healthcare organization minimizes the negative outcome of following misleading information by patients.

Regarding the environmental measurement of sustainability, it should be highlighted that the use of online and teleconferencing alternative means of communication instead of providing face-to-face consultations between patients and professionals minimizes the negative impact of transportation on the environment, as in this case, there is no need for patients and staff to travel [61,64,107–113].

Additionally, to achieve the sustainability of an organization, electronic communication tools and information systems should be used for sharing information regarding forecasts and planning within an organization, the implementation of electronic commerce or e-procurement, and the integration of medical and administrative information systems, which allows for reducing the use of paper, waste, and associated costs [56,58,114–121].

3.8. Environmental Supply Chain Management

In this context, it should be mentioned that supply chain management can be analyzed from two different perspectives: internal and external. The external chain includes producers, distributors, purchasing groups, providers, and consumers, whereas the internal chain consists of supply and inventory management, replenishment, and utilization activities [122–125]. Thus, environmental supply chain management activities focus on reducing transportation costs and, as a result, harmful emissions, encouraging environmentally oriented suppliers and a shift towards eco-products, recyclable goods, and materials, avoiding packaging, etc., to ensure a higher level of economic performance and sustainability in general [118,126–136].

3.9. Rational Resource Consumption and Waste Management

Energy consumption is a significant issue for healthcare organizations as, on average, health organizations consume more energy than other organizations within the tertiary sector of the economy [137,138]. In this regard, the following practices leading to a higher level of sustainability of an organization are suggested: conservation measures, shifting towards alternative sources of energy, the application of lean Six Sigma as a method of team collaboration aimed at eliminating or removing waste [11,12,139–142], and policies that can lead to more environmentally friendly staff behavior in general and a higher efficiency of energy consumption. It has been proven that actively following the previously suggested policies and activities reduces the level of pollution and leads to financial and consumption savings, improvements in staff and patients' comfort levels, and the well-being of the whole population in general.

Water consumption is crucial for healthcare organizations as it is a prerequisite for providing high-quality services [110,143–145]. At the same time, the active introduction and implementation of the methods of recycling water used for providing healthcare services lead to an overall improvement in financial and environmental performance, and sustainability in general. Furthermore, previous studies have shown that a 15% water reduction causes a 12% reduction in water consumption and a reduction in the daily average cost of resources per patient by up to 14% [110,143,145].

Regarding waste management, it should be mentioned that waste generated by healthcare organizations is seen as harmful to the environment as well as dangerous for individuals as it causes toxic air pollution [146,147]. Consequently, this issue should be taken seriously. Previous studies have suggested various methods of sustainability improvements for reducing waste among healthcare organizations such as eliminating overtreatment, introducing processes with fewer material inputs, the revision of waste-generating activities, using safer chemicals, the usage of environmentally friendly products, replacing disposable products with reusable alternatives, shifting towards environmentally improved technologies, etc. [61,146,148–157]. In addition to improvements in sustainability, all activities oriented toward the reduction of waste generation and the overall harmful impact on the environment generally lead to financial and consumption savings [146,148,158,159].

To achieve the aim of this study, which is to determine the main practices that ensure the sustainability of an organization in the healthcare sector based on previous successfully

implemented practices, the related recent literature was reviewed in detail. The fulfilled analysis allowed us to present the most common and tested practices in various spheres of an organization's activities, guaranteeing advances in the sustainability of an organization (Figure 3).

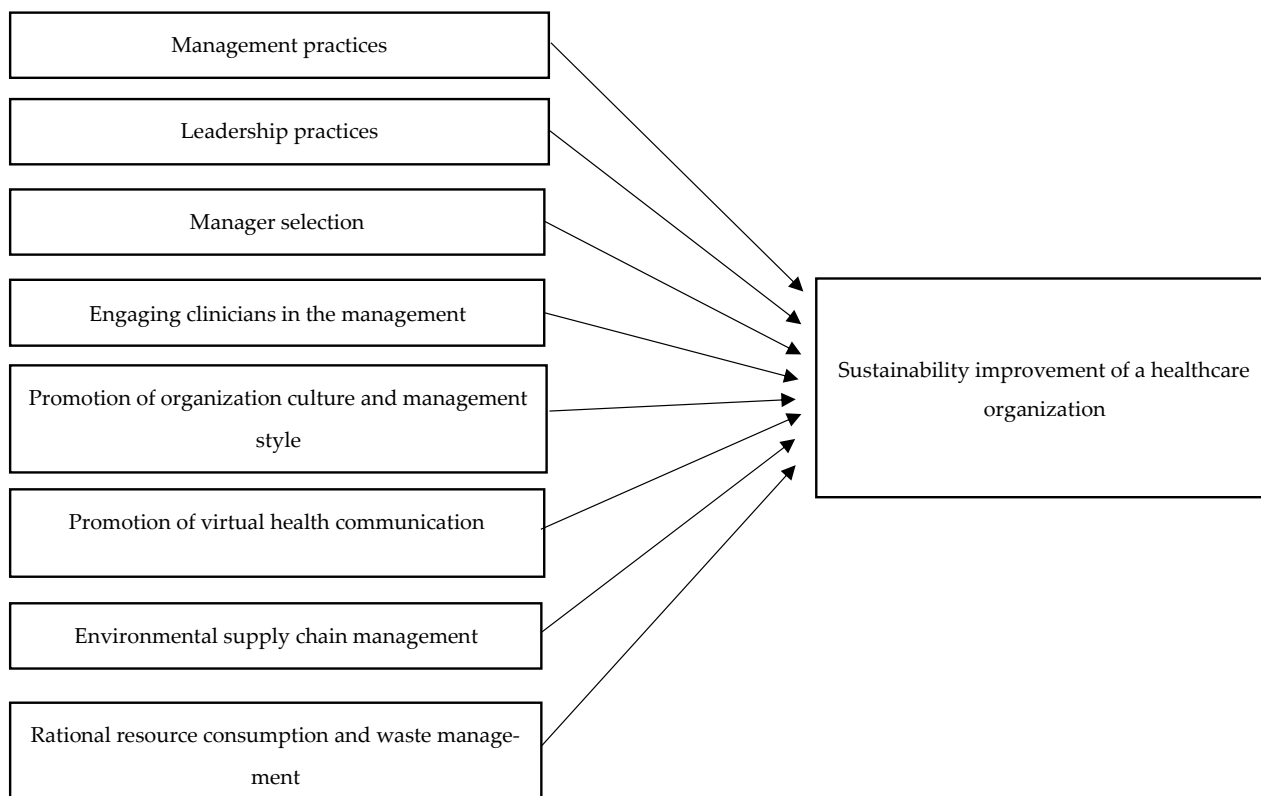


Figure 3. Practices pursuing the sustainability of a healthcare organization. Source: designed by authors.

The practices presented in Figure 3 summarize the variety of practices suggested and tested in previous studies. Thus, the following successful practices are oriented towards achieving the sustainability of an organization: improvements in management approaches, promoting leadership, specifically “engaged with other” leadership; management selection processes that account for managers’ personal characteristics; the promotion and encouragement of clinicians engaging in the management, promotion, and modification of organization culture and management style; spreading the usage of virtual means of communication in healthcare, as it leads to more equal access to healthcare organizations and doctors, simultaneously, allowing the reduction of costs, consumption and ecological footprint; promoting the environmental supply chain, which positively affects the overall level of environmental degradation; encouraging rational resource consumption, which leads to increasing the efficiency of the usage of available natural resources by encouraging recycling, reuse and shifting towards durable goods rather than disposable ones, thereby promoting techniques for minimizing waste generation by healthcare organizations.

4. Conclusions

The results of this systematic review are applicable to various spheres such as theoretical, managerial, and policy making. Theoretical implementations are beneficial for scholars as the most successful practices that ensure the sustainability of an organization; thus, they can be used for further research to analyze the impact of each of the suggested practices, study the efficiency of a combination of practices, compare the impact of practices in various countries, and identify the economic and social limitations of using these practices, which will enrich the existing literature. Moreover, the findings of this study can be used for theoretical development and testing. At the same time, the obtained findings can be

used by instructors while teaching business courses or for providing business consultations to healthcare organizations.

Additionally, managerial implementation can be seen as follows: managerial practices aiming at minimizing the usage of natural resources; shifting towards recycling and the use of durable goods; spreading the use of environmentally friendly technologies and processes; encouraging the use of virtual means of communication within the staff and between doctors and patients; integrating electronic documentation systems and e-commerce; promoting leadership and encouraging the environmentally oriented behavior of employees and the related system of knowledge, values, norms, culture, ethics, and lifestyle; the application of the principles of the environmental supply chain; the engagement of clinicians in management; and preferably, selecting managers with expertise and/or previous experience in working in the healthcare sector.

Regarding the implementation of results in the policy-making process, it should be mentioned that the state sector should play an active role by stimulating, encouraging, and providing benefits or lower taxes to healthcare organizations that switch to environmentally friendly technologies and processes. At the same time, the state sector should control the content of the medical available posts, as unreliable information can negatively affect the health status of the population. Furthermore, the state should increase the awareness of the global environmental, economic, and social issues among adults and children, as the level of personal engagement in solving these problems is determined by the culture, norms, beliefs, ethics, and current behavioral patterns.

5. Recommendations and Limitations

The current study has several limitations. First, the study includes papers published in journals from two databases: Scopus and Web of Science; thus, the inclusion of a wider variety of papers will expand the existing literature and enlarge the overall picture of the practices that ensure the sustainability of healthcare organizations in particular.

Second, as this study aims to determine the most common and successful practices implemented by healthcare organizations, the analyzed papers include data from different regions and both public and private organizations. Thus, further studies can focus on the analysis of economic, social, demographic, and cultural differences between countries and regions, as well as the differences between private and public organizations in the context of successful practices that ensure the sustainability of an organization.

Third, this study does not analyze the impact of COVID-19 on the practices ensuring the sustainability of healthcare organizations; therefore, future research can be aimed at studying the impact of the COVID-19 pandemic on practices implemented by healthcare organizations to achieve sustainability.

Author Contributions: Conceptualization, A.M., T.A. and M.R.P.; methodology, A.M., T.A. and M.R.P.; software, A.M. and T.A.; validation, A.M., T.A. and M.R.P.; formal analysis, A.M. and T.A.; investigation, A.M., T.A. and M.R.P.; resources, A.M., T.A. and M.R.P.; data curation, A.M., T.A. and M.R.P.; writing—original draft preparation, A.M., T.A. and M.R.P.; writing—review and editing, A.M., T.A. and M.R.P.; visualization, A.M., T.A. and M.R.P.; supervision, A.M. and T.A.; project administration, A.M., T.A. and M.R.P.; funding acquisition, A.M., T.A. and M.R.P. All authors have read and agreed to the published version of the manuscript.

Funding: This study received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Review of secondary literature.

Acknowledgments: The authors appreciate the efforts of the editors and anonymous reviewers, who suggested insightful ideas and comments to enrich this study.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Summary of selected articles.

		Author (Year)	Title	Journal	Keywords
1.	[123]	Beaulieu, M., & Bentahar, O. (2021)	Digitalization of the healthcare supply chain: A roadmap to generate benefits and effectively support healthcare delivery	<i>Technological Forecasting and Social Change</i>	Supply chain; digital supply chain; logistics, healthcare delivery; benefits; technology
2.	[80]	Cafagna, G., Seghieri, C., Vainieri, M., & Nuti, S. (2018)	A turnaround strategy: Improving equity in order to achieve quality of care and financial sustainability in Italy	<i>International Journal for Equity in Health</i>	Health equity; socioeconomic status; education, financial sustainability; quality of care; heart failure; Italy; performance management; clinical pathway
3.	[8]	Cavicchi, C., Oppi, C., & Vagnoni, E. (2022)	Back and Forth on Sustainable Development: A Focus on Healthcare Organisations	<i>Sustainability</i>	Sustainable development; healthcare; intellectual capital; survey; Italy
4.	[48]	Chandra, Y., Shang, L., & Roy, M. J. (2022)	Understanding Healthcare Social Enterprises: A New Public Governance Perspective	<i>Journal of Social Policy</i>	Social enterprise; healthcare; health; intervention; New Public Governance
5.	[158]	Chauhan, A. (2020)	Framework for Sustainable Healthcare Waste Management in India	<i>Transforming Organizations Through Flexible Systems Management</i>	Healthcare waste disposal firms; healthcare waste management framework; multi-criteria decision-making methods; optimization and statistical modeling; sustainability
6.	[107]	Chellaiyan, V. (2020)	Telemedicine: A Paradigm Shift in Healthcare in the wake of COVID-19 in India	<i>Journal of Clinical and Diagnostic Research</i>	Accessibility; health service; sustainability; teleconsultation
7.	[71]	Chi, Y., Yu, C., Qi, X., & Xu, H. (2018)	Knowledge Management in Healthcare Sustainability: A Smart Healthy Diet Assistant in Traditional Chinese Medicine Culture	<i>Sustainability</i>	Healthcare sustainability; healthcare education; healthy diet; knowledge graph; traditional Chinese medicine
8.	[96]	Conte, F., Vitale, P., Vollero, A., & Siano, A. (2018)	Designing a Data Visualization Dashboard for Managing the Sustainability Communication of Healthcare Organizations on Facebook	<i>Sustainability</i>	Sustainability communication management; data visualization dashboard; healthcare organizations; social media; user engagement; managerial dashboard
9.	[127]	Damoah, I. S., Ayakwah, A., & Tingbani, I. (2021)	Artificial intelligence (AI)-enhanced medical drones in the healthcare supply chain (HSC) for sustainability development: A case study	<i>Journal of Cleaner Production</i>	Sustainability; sustainable development; medical drone; AI technology; public healthcare delivery; supply chain management; developing countries
10.	[106]	Dunne, H., Rizan, C., Jones, A., Bhutta, M. F., Taylor, T., Barna, S., Taylor, C. J., & Okorie, M. (2022)	Effectiveness of an online module: Climate-change and sustainability in clinical practice	<i>BMC Medical Education</i>	Sustainability; climate-change; online; multimedia
11.	[114]	Emilsson, M., Ernstson, U., Gustavsson, L., & Svensson, A. (2020)	Sustainable Innovations in Small Enterprises for the Transformation of the Primary Healthcare Sector	<i>Sustainability</i>	Healthcare; digital innovation; sustainability; small enterprises; incremental development; collaborative learning; knowledge integration
12.	[108]	Faezipour, M., & Faezipour, M. (2020)	Sustainable Smartphone-Based Healthcare Systems: A Systems Engineering Approach to Assess the Efficacy of Respiratory Monitoring Apps	<i>Sustainability</i>	System dynamics; modeling; systems engineering; sustainability; respiration
13.	[143]	Faezipour, M., & Ferreira, S. (2018)	A System Dynamics Approach for Sustainable Water Management in Hospitals	<i>IEEE Systems Journal</i>	Healthcare; hospitals; simulation; sustainability; system dynamics; systems thinking; water sustainability

Table A1. Cont.

		Author (Year)	Title	Journal	Keywords
14.	[91]	Faggini, M., Cosimato, S., Nota, F. D., & Nota, G. (2019)	Pursuing Sustainability for Healthcare through Digital Platforms	<i>Sustainability</i>	Sustainability; healthcare; patient-centeredness; digital platforms; interaction type
15.	[88]	Fally, M., Møller, M. E. E., Anhøj, J., Tarp, B., Benfield, T., & Ravn, P. (2022)	Sustainability of healthcare improvements for patients admitted with community-acquired pneumonia: Follow-up data from a quality improvement project	<i>BMJ Open Quality</i>	Sustainability; healthcare; community-acquired pneumonia
16.	[159]	Ferronato, N., Ragazzi, M., Torrez Elias, M. S., Gorrity Portillo, M. A., Guisbert Lizarazu, E. G., & Torretta, V. (2020)	Application of healthcare waste indicators for assessing infectious waste management in Bolivia	<i>Waste Management & Research</i>	Developing countries; circular economy; sustainable development; waste management indicators; management tools
17.	[144]	Gómez-Chaparro, M., García Sanz-Calcedo, J., & Armenta-Márquez, L. (2018)	Study on the use and consumption of water in Spanish private hospitals as related to healthcare activity	<i>Urban Water Journal</i>	Water consumption; healthcare engineering; hospital environmental quality; sustainable water management
18.	[35]	Haddiya, I., Janfi, T., & Guedira, M. (2020)	Application of the Concepts of Social Responsibility, Sustainability, and Ethics to Healthcare Organizations	<i>Risk Management and Healthcare Policy</i>	CSR; sustainability; ethics; healthcare
19.	[128]	Hussain, M., Ajmal, M. M., Gunasekaran, A., & Khan, M. (2018)	Exploration of social sustainability in healthcare supply chain	<i>Journal of Cleaner Production</i>	Social sustainability; healthcare supply chain; stakeholder theory
20.	[129]	Hussain, M., Khan, M., & Ajmal, M. (2019)	Exploration and assessment of the motivators of social sustainability in healthcare supply chains: Multistakeholder's perspective	<i>Sustainable Development</i>	AHP; healthcare supply chain; motivators; social sustainability; stakeholder theory
21.	[115]	Ianculescu, M., & Alexandru, A. (2020)	Microservices—A Catalyst for Better Managing Healthcare Data Empowerment	<i>Studies in Informatics and Control</i>	Microservices; remote healthcare monitoring system; data empowerment; scalability
22.	[60]	Iandolo, F., Vito, P., Fulco, I., & Loia, F. (2018)	From Health Technology Assessment to Health Technology Sustainability	<i>Sustainability</i>	Health technology assessment; evaluation methods; viable systems approach; healthcare; sustainability
23.	[72]	Karamat, J., Shurong, T., Ahmad, N., Afridi, S., Khan, S., & Mahmood, K. (2019)	Promoting Healthcare Sustainability in Developing Countries: Analysis of Knowledge Management Drivers in Public and Private Hospitals of Pakistan	<i>International Journal of Environmental Research and Public Health</i>	Healthcare sustainability; drivers; knowledge management; interpretive structural modeling; developing countries; Pakistan
24.	[9]	Katz, C. (2022)	The Ethical Duty to Reduce the Ecological Footprint of Industrialized Healthcare Services and Facilities	<i>Journal of Medicine and Philosophy</i>	Andrew Jameton; beneficence; distributive justice; Jessica Pierce; rationing; sustainability
25.	[69]	Ketprapakorn, N., & Kantabutra, S. (2019)	Sustainable Social Enterprise Model: Relationships and Consequences	<i>Sustainability</i>	Sustainable enterprise; corporate sustainability; social enterprise; social healthcare enterprise; sufficiency economy; brand management; socioeconomic
26.	[130]	Khan, M., Hussain, M., Gunasekaran, A., Ajmal, M. M., & Helo, P. T. (2018)	Motivators of social sustainability in healthcare supply chains in the UAE-Stakeholder perspective	<i>Sustainable Production and Consumption</i>	Healthcare supply chains; social sustainability; motivators; UAE
27.	[131]	Khosravi, F., & Izbirak, G. (2019)	A stakeholder perspective of social sustainability measurement in healthcare supply chain management	<i>Sustainable Cities and Society</i>	Social sustainability; sustainability fluctuation; performance measurement; exponentially distributed indicators; stakeholder theory

Table A1. Cont.

		Author (Year)	Title	Journal	Keywords
28.	[10]	Lee, S. M., & Lee, D. (2022)	Developing Green Healthcare Activities in the Total Quality Management Framework	<i>International Journal of Environmental Research and Public Health</i>	Green healthcare; continuous improvement activities; total quality management framework; healthcare industry
29.	[50]	Leite, H., Bateman, N., & Radnor, Z. (2020)	Beyond the ostensible: An exploration of barriers to lean implementation and sustainability in healthcare	<i>Production Planning & Control</i>	Lean production; leanhealthcare; leanimplementation; barriers;public healthcare
30.	[151]	Li, H., Dietl, H., & Li, J. (2021)	Identifying key factors influencing sustainable element in healthcare waste management using the interval-valued fuzzy DEMATEL method	<i>Journal of Material Cycles and Waste Management</i>	Key factor identification; sustainable element; healthcare waste management; interval-valued fuzzy DEMATEL method
31.	[150]	Li, H., Li, J., Zhang, Z., Cao, X., Zhu, J., & Chen, W. (2020)	Establishing an interval-valued fuzzy decision-making method for sustainable selection of healthcare waste treatment technologies in the emerging economies	<i>Journal of Material Cycles and Waste Management</i>	Healthcare waste treatment technology; multi-criteria decision making; interval-valued fuzzy DEMATEL; interval-valued fuzzy TOPSIS; sustainability
32.	[86]	Lister, H. E., Mostert, K., Botha, T., van der Linde, S., van Wyk, E., Rocher, S.-A., Laing, R., Wu, L., Müller, S., des Tombe, A., Kganyago, T., Zwane, N., Mphogo, B., & Maric, F. (2022)	South African Healthcare Professionals' Knowledge, Attitudes, and Practices Regarding Environmental Sustainability in Healthcare: A Mixed-Methods Study	<i>International Journal of Environmental Research and Public Health</i>	Environmental sustainability; sustainable healthcare; occupational therapy; physiotherapy; planetary health; climate change; healthcare professions
33.	[46]	Liu, X.-L., Wang, T., Tan, J.-Y., Stewart, S., Chan, R. J., Eliseeva, S., Polotan, M. J., & Zhao, I. (2022)	Sustainability of healthcare professionals' adherence to clinical practice guidelines in primary care	<i>BMC Primary Care</i>	Sustainability; healthcare professionals; adherence; clinical practice guidelines; primary care
34.	[109]	Lo Presti, L., Testa, M., Marino, V., & Singer, P. (2019)	Engagement in Healthcare Systems: Adopting Digital Tools for a Sustainable Approach	<i>Sustainability</i>	Engagement platform; digital health; social sustainability
35.	[152]	Makan, A., & Fadili, A. (2021)	Sustainability assessment of healthcare waste treatment systems using surrogate weights and PROMETHEE method	<i>Waste Management & Research</i>	Sustainability assessment; healthcare waste; treatment systems; surrogate weights; Preference Ranking Organization Method for Enrichment Evaluations
36.	[153]	Maniero Moreira, A. M., & Risso Guenther, W. M. (2019)	Healthcare Waste Management in a Brazilian Higher Education and Health Research Institution	<i>Sustainability on University Campuses: Learning, Skills Building and Best Practices</i>	Sustainability; university; waste management; healthcare waste; hazardous waste
37.	[147]	Meleko, A., Tesfaye, T., & Henok, A. (2018)	Assessment of Healthcare Waste Generation Rate and Its Management System in Health Centers of Bench Maji Zone	<i>Ethiopian Journal of Health Sciences</i>	Healthcare waste; health center; healthcare waste Generation rate; hazardous waste; general waste
38.	[62]	Moldovan, F., Blaga, P., Moldovan, L., & Bataga, T. (2022)	An Innovative Framework for Sustainable Development in Healthcare: The Human Rights Assessment	<i>International Journal of Environmental Research and Public Health</i>	Healthcare; sustainable development; human rights; assessment; reference framework; facility
39.	[36]	Munthe, C., Fumagalli, D., & Malmqvist, E. (2021)	Sustainability principle for the ethics of healthcare resource allocation	<i>Journal of Medical Ethics</i>	Sustainability; ethics; healthcare resource allocation
40.	[111]	Newbould, L., Ariss, S., Mountain, G., & Hawley, M. S. (2021)	Exploring factors that affect the uptake and sustainability of videoconferencing for healthcare provision for older adults in care homes: A realist evaluation	<i>Bmc Medical Informatics and Decision Making</i>	Videoconferencing; care homes; older adults; admissions; implementation; sustainability; uptake, remote consultation

Table A1. Cont.

		Author (Year)	Title	Journal	Keywords
41.	[133]	Nsikan, J., Affiah, E. A., Briggs, I., & Koko, N. (2022)	Sustainable supplier selection factors and supply chain performance in the Nigerian healthcare industry	<i>Journal of Transport and Supply Chain Management</i>	Sustainability; supplier selection; procurement; triple bottom line; sustainable supply chain management
42.	[37]	Nyholm, L., Salmela, S., Nystrom, L., & Koskinen, C. (2018)	Sustainability in care through an ethical practice model	<i>Nursing Ethics</i>	Care; ethics; hermeneutic application research; model; sustainability
43.	[119]	Poba-Nzaou, P., Kume, N., & Kobayashi, S. (2020)	Developing and Sustaining an Open Source Electronic Health Record: Evidence from a Field Study in Japan	<i>Journal of Medical Systems</i>	Electronic health records; open source; sustainability; governance; Japan
44.	[38]	Previtalli, P., & Cerchiello, P. (2018)	The Prevention of Corruption as an Unavoidable Way to Ensure Healthcare System Sustainability	<i>Sustainability</i>	Healthcare sustainability; anti-corruption; healthcare organizations; corruption prevention plan; healthcare management; compliance
45.	[154]	Puska, A., Stevic, Z., & Pamucar, D. (2022)	Evaluation and selection of healthcare waste incinerators using extended sustainability criteria and multi-criteria analysis methods	<i>Environment Development and Sustainability</i>	Medical waste; compromise ranking of alternatives from distance to ideal solution (CRADIS); incinerators; full consistency method (FUCOM); Bosnia and Herzegovina
46.	[155]	Ranjbari, M., Esfandabadi, Z. S., Shevchenko, T., Chassagnon-Haned, N., Peng, W., Tabatabaei, M., & Aghbashlo, M. (2022)	Mapping healthcare waste management research: Past evolution, current challenges, and future perspectives towards a circular economy transition	<i>Journal of Hazardous Materials</i>	Waste management; healthcare waste; circular economy; environmental sustainability; hazardous waste; medical waste
47.	[52]	Rattan, T. K., Joshi, M., Vesty, G., & Sharma, S. (2022)	Sustainability indicators in public healthcare: A factor analysis approach	<i>Journal of Cleaner Production</i>	Sustainability; sustainable development goals (SDGs); Ayurveda; healthcare delivery; confirmatory factor analysis; exploratory factor analysis
48.	[112]	Remondino, M. (2018)	Information Technology in Healthcare: HHC-MOTES, a Novel Set of Metrics to Analyse IT Sustainability in Different Areas	<i>Sustainability</i>	Information technology; healthcare; measurement; efficiency; performance; managerial perspective; key performance indicators; decision support; HHC-MOTES framework
49.	[87]	Rodriguez, R., Svensson, G., & Eriksson, D. (2018)	Organizational positioning and planning of sustainability initiatives: Logic and differentiators	<i>International Journal of Public Sector Management</i>	Hospitals; planning; triple bottom line; corporate social responsibility; sustainability; positioning
50.	[135]	Rodriguez, R., Svensson, G., & Eriksson, D. (2021)	Priorities Determining Future Directions of Sustainable Development in Business Models of the Healthcare Industry-Findings and Framework	<i>Sustainability</i>	Sustainable development; sustainability; business model; supply chain; healthcare; Spain
51.	[134]	Rodriguez, R., Svensson, G., & Otero-Neira, C. (2019)	Future direction of sustainable development in private hospitals: General similarities and specific differences	<i>Journal of Business & Industrial Marketing</i>	Healthcare; Spain; sustainable development; sustainability management; private hospital
52.	[53]	Rodriguez, R., Svensson, G., & Wood, G. (2020)	Sustainability trends in public hospitals: Efforts and priorities	<i>Evaluation and Program Planning</i>	Sustainable development; healthcare; trends
53.	[54]	Rodriguez, R., Svensson, G., & Wood, G. (2020)	Assessing corporate planning of future sustainability initiatives in private healthcare organizations	<i>Evaluation and Program Planning</i>	Healthcare; hospital; private; sustainability; corporate; planning
54.	[94]	Russo, G., Tartaglione, A. M., & Cavacece, Y. (2019)	Empowering Patients to Co-Create a Sustainable Healthcare Value	<i>Sustainability</i>	Healthcare sustainability; patient empowerment; value co-creation; structural equation modeling

Table A1. Cont.

		Author (Year)	Title	Journal	Keywords
55.	[44]	Saviano, M., Bassano, C., Picicchi, P., Di Nauta, P., & Lettieri, M. (2018)	Monitoring Viability and Sustainability in Healthcare Organizations	<i>Sustainability</i>	Healthcare organizations; control; viability; sustainability; systems monitoring
56.	[136]	Scavarda, A., Dau, G. L., Scavarda, L. F., & Korzenowski, A. L. (2019)	A proposed healthcare supply chain management framework in the emerging economies with the sustainable lenses: The theory, the practice, and the policy	<i>Resources Conservation and Recycling</i>	Supply chain; sustainability; healthcare; emerging economy; corporate social responsibility; education
57.	[124]	Schutte, C., Niemann, W., & Kotz, é T. (2022)	Exploring Relationship Power in Supply Chain Sustainability Practices: a Case Study of a South African Hospital Group	<i>South African Journal of Industrial Engineering</i>	Supply chain; sustainability; South African Hospital Group
58.	[156]	Sepetis, A., Zaza, P. N., Rizos, F., & Bagos, P. G. (2022)	Identifying and Predicting Healthcare Waste Management Costs for an Optimal Sustainable Management System: Evidence from the Greek Public Sector	<i>International Journal of Environmental Research and Public Health</i>	Climate change; public health; waste management; healthcare waste; medical waste; sustainability in healthcare; Greece
59.	[141]	Singh, P. (2019)	Lean in healthcare organization: An opportunity for environmental sustainability	<i>Benchmarking-an International Journal</i>	Lean; environmental sustainability; ecology; lean in healthcare organization
60.	[70]	Suriyankietkaew, S., & Kungwanpongpan, P. (2021)	Strategic leadership and management factors driving sustainability in health-care organizations in Thailand	<i>Journal of Health Organization and Management</i>	Leadership; sustainable healthcare; pharmaceutical companies; sustainability; performance; factor analysis; SDG; Thailand
61.	[63]	Tooranloo, H. S., Karimi, S., & Vaziri, K. (2018)	Analysis of the Factors Affecting Sustainable Electronic Supply Chains in Healthcare Centers: An Interpretive-Structural Modeling Approach	<i>Information Resources Management Journal</i>	Electronic supply chain; Healthcare centers; interpretive–structural modeling approach; sustainable supply chain
62.	[157]	Torkayesh, A. E., Vandchali, H. R., & Tirkolae, E. B. (2021)	Multi-Objective Optimization for Healthcare Waste Management Network Design with Sustainability Perspective	<i>Sustainability</i>	Healthcare waste management; sustainability; waste network design; multi-objective optimization; multi-choice goal programming
63.	[113]	Visconti, R. M., Martiniello, L., Morea, D., & Gebennini, E. (2019)	Can Public-Private Partnerships Foster Investment Sustainability in Smart Hospitals?	<i>Sustainability</i>	Project financing; infrastructures; social impact investments; results-based financing (RBF); value co-creation; supply chain; patient-centered care; value-based healthcare; availability payment; bankability
64.	[105]	Wadmann, S., & Hoeyer, K. (2018)	Dangers of the digital fit: Rethinking seamlessness and social sustainability in data-intensive healthcare	<i>Big Data & Society</i>	Denmark; digital fit; electronic medical record; infrastructure; seamlessness; sustainability
65.	[11]	Wagrell, S., Havensvid, M. I., Linné, Å., & Sundquist, V. (2022)	Building sustainable hospitals: A resource interaction perspective	<i>Industrial Marketing Management</i>	Social and economic sustainability; healthcare; hospitals; resource interaction
66.	[12]	Weimann, L., & Weimann, E. (2022)	On the Road to Net Zero Health Care Systems: Governance for Sustainable Health Care in the United Kingdom and Germany	<i>International Journal of Environmental Research and Public Health</i>	Governance; healthcare; systems-thinking; net zero; sustainable development; public health; NHS UK; German healthcare; healthcare law; planetary health
67.	[138]	Zhu, Q., Johnson, S., & Sarkis, J. (2018)	Lean six sigma and environmental sustainability: A hospital perspective	<i>Supply Chain Forum: An International Journal</i>	Healthcare; hospitals; supply chain; environmental sustainability; lean and Six Sigma; green

References

1. United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development | Department of Economic and Social Affairs. Available online: <https://sdgs.un.org/2030agenda> (accessed on 22 December 2022).
2. UNDP. Socio-Economic Impact of COVID-19 | United Nations Development Programme. Available online: <https://www.undp.org/coronavirus/socio-economic-impact-covid-19> (accessed on 1 December 2022).
3. United Nations. Everyone Included: Social Impact of COVID-19 | DISD. Available online: <https://www.un.org/development/dspd/everyone-included-covid-19.html> (accessed on 1 December 2022).
4. World Health Organization. Impact of COVID-19 on People's Livelihoods, Their Health and Our Food Systems. Available online: <https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people> (accessed on 1 December 2022).
5. Grazhevska, N.; Mostepaniuk, A. The Development of Corporate Social Responsibility in the Context of Overcoming a Welfare State Crisis: A Theoretical and Empirical Analysis. *Comp. Econ. Res. Cent. East. Eur.* **2021**, *24*, 123–140. [\[CrossRef\]](#)
6. Purvis, B.; Mao, Y.; Robinson, D. Three Pillars of Sustainability: In Search of Conceptual Origins. *Sustain. Sci.* **2019**, *14*, 681–695. [\[CrossRef\]](#)
7. Danese, P.; Manfè, V.; Romano, P. A Systematic Literature Review on Recent Lean Research: State-of-the-Art and Future Directions. *Int. J. Manag. Rev.* **2018**, *20*, 579–605. [\[CrossRef\]](#)
8. Cavicchi, C.; Oppi, C.; Vagnoni, E. Back and Forth on Sustainable Development: A Focus on Healthcare Organisations. *Sustainability* **2022**, *14*, 4958. [\[CrossRef\]](#)
9. Katz, C. The Ethical Duty to Reduce the Ecological Footprint of Industrialized Healthcare Services and Facilities. *J. Med. Philos.* **2022**, *47*, 32–53. [\[CrossRef\]](#)
10. Lee, S.M.; Lee, D. Developing Green Healthcare Activities in the Total Quality Management Framework. *Int. J. Environ. Res. Public Health* **2022**, *19*, 6504. [\[CrossRef\]](#) [\[PubMed\]](#)
11. Wagrell, S.; Havensvid, M.I.; Linné, Å.; Sundquist, V. Building Sustainable Hospitals: A Resource Interaction Perspective. *Ind. Mark. Manag.* **2022**, *106*, 420–431. [\[CrossRef\]](#)
12. Weimann, L.; Weimann, E. On the Road to Net Zero Health Care Systems: Governance for Sustainable Health Care in the United Kingdom and Germany. *Int. J. Environ. Res. Public Health* **2022**, *19*, 12167. [\[CrossRef\]](#)
13. Fisch, C.; Block, J. Six Tips for Your (Systematic) Literature Review in Business and Management Research. *Manag. Rev. Q.* **2018**, *68*, 103–106. [\[CrossRef\]](#)
14. PRISMA. Available online: <https://prisma-statement.org/Protocols/ProtocolGuidance> (accessed on 23 November 2022).
15. Page, M.J.; McKenzie, J.E.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews. *Syst. Rev.* **2021**, *10*, 89. [\[CrossRef\]](#) [\[PubMed\]](#)
16. Brundtland, G.H. Our Common Future—Call for Action. *Environ. Conserv.* **1987**, *14*, 291–294. [\[CrossRef\]](#)
17. Du Plessis, C. Towards a Regenerative Paradigm for the Built Environment. *Build. Res. Inf.* **2012**, *40*, 7–22. [\[CrossRef\]](#)
18. Ives, C.D.; Freeth, R.; Fischer, J. Inside-out Sustainability: The Neglect of Inner Worlds. *Ambio* **2020**, *49*, 208–217. [\[CrossRef\]](#) [\[PubMed\]](#)
19. Lenton, T.M.; Rockström, J.; Gaffney, O.; Rahmstorf, S.; Richardson, K.; Steffen, W.; Schellnhuber, H.J. Climate Tipping Points—Too Risky to Bet Against. *Nature* **2019**, *575*, 592–595. [\[CrossRef\]](#)
20. Living Planet Report 2016. Available online: <https://www.worldwildlife.org/pages/living-planet-report-2016> (accessed on 23 November 2022).
21. Bastianoni, S.; Coscieme, L.; Caro, D.; Marchettini, N.; Pulselli, F.M. The Needs of Sustainability: The Overarching Contribution of Systems Approach. *Ecol. Indic.* **2019**, *100*, 69–73. [\[CrossRef\]](#)
22. Miller, T.R.; Wiek, A.; Sarewitz, D.; Robinson, J.; Olsson, L.; Kriebel, D.; Loorbach, D. The Future of Sustainability Science: A Solutions-Oriented Research Agenda. *Sustain. Sci.* **2014**, *9*, 239–246. [\[CrossRef\]](#)
23. Mostepaniuk, A.; Nasr, E.; Awwad, R.I.; Hamdan, S.; Aljuhmani, H.Y. Managing a Relationship between Corporate Social Responsibility and Sustainability: A Systematic Review. *Sustainability* **2022**, *14*, 11203. [\[CrossRef\]](#)
24. Wiek, A.; Ness, B.; Schweizer-Ries, P.; Brand, F.S.; Farioli, F. From Complex Systems Analysis to Transformational Change: A Comparative Appraisal of Sustainability Science Projects. *Sustain. Sci.* **2012**, *7*, 5–24. [\[CrossRef\]](#)
25. National Research Council. *Our Common Journey: A Transition Toward Sustainability*; National Academies Press: Washington, DC, USA, 1999; ISBN 978-0-309-08638-7.
26. Fang, X.; Zhou, B.; Tu, X.; Ma, Q.; Wu, J. “What Kind of a Science Is Sustainability Science?” An Evidence-Based Reexamination. *Sustainability* **2018**, *10*, 1478. [\[CrossRef\]](#)
27. Miller, T.R. Constructing Sustainability Science: Emerging Perspectives and Research Trajectories. *Sustain. Sci.* **2013**, *8*, 279–293. [\[CrossRef\]](#)
28. Wiek, A. Solving Sustainability Problems Tools for a New Generation of Professionals. Available online: <https://www.coursehero.com/file/44150058/Solving-Sustainability-Problems-Bookpdf/> (accessed on 23 November 2022).
29. Polimeni, J.M.; Polimeni, R.I. Jevons' Paradox and the Myth of Technological Liberation. *Ecol. Complex.* **2006**, *3*, 344–353. [\[CrossRef\]](#)

30. Sterman, J.D. Sustaining Sustainability: Creating a Systems Science in a Fragmented Academy and Polarized World. In *Sustainability Science: The Emerging Paradigm and the Urban Environment*; Weinstein, M.P., Turner, R.E., Eds.; Springer: New York, NY, USA, 2012; pp. 21–58. ISBN 978-1-4614-3188-6.
31. Du Plessis, C.; Brandon, P. An Ecological Worldview as Basis for a Regenerative Sustainability Paradigm for the Built Environment. *J. Clean. Prod.* **2015**, *109*, 53–61. [[CrossRef](#)]
32. González-Márquez, I.; Toledo, V.M. Sustainability Science: A Paradigm in Crisis? *Sustainability* **2020**, *12*, 2802. [[CrossRef](#)]
33. Abson, D.J.; Fischer, J.; Leventon, J.; Newig, J.; Schomerus, T.; Vilsmaier, U.; von Wehrden, H.; Abernethy, P.; Ives, C.D.; Jäger, N.W.; et al. Leverage Points for Sustainability Transformation. *Ambio* **2017**, *46*, 30–39. [[CrossRef](#)] [[PubMed](#)]
34. Gibbons, L.V. Moving Beyond Sustainability: A Regenerative Community Development Framework for Co-Creating Thriving Living Systems and Its Application. *J. Sustain. Dev.* **2020**, *13*, 20. [[CrossRef](#)]
35. Haddiya, I.; Janfi, T.; Guedira, M. Application of the Concepts of Social Responsibility, Sustainability, and Ethics to Healthcare Organizations. *Risk Manag. Healthc. Policy* **2020**, *13*, 1029–1033. [[CrossRef](#)] [[PubMed](#)]
36. Munthe, C.; Fumagalli, D.; Malmqvist, E. Sustainability Principle for the Ethics of Healthcare Resource Allocation. *J. Med. Ethics* **2021**, *47*, 90–97. [[CrossRef](#)]
37. Nyholm, L.; Salmela, S.; Nystrom, L.; Koskinen, C. Sustainability in Care through an Ethical Practice Model. *Nurs. Ethics* **2018**, *25*, 264–272. [[CrossRef](#)]
38. Previtali, P.; Cerchiello, P. The Prevention of Corruption as an Unavoidable Way to Ensure Healthcare System Sustainability. *Sustainability* **2018**, *10*, 3071. [[CrossRef](#)]
39. Grazhevska, N.; Mostepaniuk, A. Ecological Components of Corporate Social Responsibility: Theoretical Background and Practical Implementation. *J. Environ. Manag. Tour.* **2020**, *11*, 1060–1066. [[CrossRef](#)]
40. Kroll, C.; Warchold, A.; Pradhan, P. Sustainable Development Goals (SDGs): Are We Successful in Turning Trade-Offs into Synergies? *Palgrave Commun.* **2019**, *5*, 140. [[CrossRef](#)]
41. Mang, P.; Reed, B. Designing from Place: A Regenerative Framework and Methodology. *Build. Res. Inf.* **2012**, *40*, 23–38. [[CrossRef](#)]
42. Gibbons, L.V.; Pearthree, G.; Cloutier, S.A.; Ehlenz, M.M. The Development, Application, and Refinement of a Regenerative Development Evaluation Tool and Indicators. *Ecol. Indic.* **2020**, *108*, 105698. [[CrossRef](#)]
43. Hes, D.; Stephan, A.; Moosavi, S. Evaluating the Practice and Outcomes of Applying Regenerative Development to a Large-Scale Project in Victoria, Australia. *Sustainability* **2018**, *10*, 460. [[CrossRef](#)]
44. Saviano, M.; Bassano, C.; Piciocchi, P.; Di Nauta, P.; Lettieri, M. Monitoring Viability and Sustainability in Healthcare Organizations. *Sustainability* **2018**, *10*, 3548. [[CrossRef](#)]
45. Dickinson, H.; Ham, C. *Engaging Doctors in Leadership: What Can We Learn from International Experience and Research Evidence*; University of Birmingham, Health Services Management Centre: Birmingham, UK, 2008.
46. Liu, X.-L.; Wang, T.; Tan, J.-Y.; Stewart, S.; Chan, R.J.; Eliseeva, S.; Polotan, M.J.; Zhao, I. Sustainability of Healthcare Professionals' Adherence to Clinical Practice Guidelines in Primary Care. *BMC Prim. Care* **2022**, *23*, 36. [[CrossRef](#)]
47. Street, A.; Carr-Hill, R.; Posnett, J. Is Hospital Performance Related to Expenditure on Management? *J. Health Serv. Res. Policy* **1999**, *4*, 16–23. [[CrossRef](#)]
48. Chandra, Y.; Shang, L.; Roy, M.J. Understanding Healthcare Social Enterprises: A New Public Governance Perspective. *J. Soc. Policy* **2022**, *51*, 834–855. [[CrossRef](#)]
49. Kumar, K.S.; Babu, R.V.; Paranitharan, K.P. Application of Integrated Lean Six Sigma Quality Healthcare System Practice in Indian Healthcare. *Int. J. Value Chain Manag.* **2022**, *13*, 112–139. [[CrossRef](#)]
50. Leite, H.; Bateman, N.; Radnor, Z. Beyond the Ostensible: An Exploration of Barriers to Lean Implementation and Sustainability in Healthcare. *Prod. Plan. Control* **2020**, *31*, 1–18. [[CrossRef](#)]
51. Mazzocato, P.; Savage, C.; Brommels, M.; Aronsson, H.; Thor, J. Lean Thinking in Healthcare: A Realist Review of the Literature. *BMJ Qual. Saf.* **2010**, *19*, 376–382. [[CrossRef](#)]
52. Rattan, T.K.; Joshi, M.; Vesty, G.; Sharma, S. Sustainability Indicators in Public Healthcare: A Factor Analysis Approach. *J. Clean. Prod.* **2022**, *370*, 133253. [[CrossRef](#)]
53. Rodriguez, R.; Svensson, G.; Wood, G. Sustainability Trends in Public Hospitals: Efforts and Priorities. *Eval. Program Plann.* **2020**, *78*, 101742. [[CrossRef](#)]
54. Rodriguez, R.; Svensson, G.; Wood, G. Assessing Corporate Planning of Future Sustainability Initiatives in Private Healthcare Organizations. *Eval. Program Plann.* **2020**, *83*, 101869. [[CrossRef](#)]
55. Alimo-Metcalfe, B.; Alban-Metcalfe, J.; Bradley, M.; Mariathan, J.; Samele, C. The Impact of Engaging Leadership on Performance, Attitudes to Work and Wellbeing at Work: A Longitudinal Study. *J. Health Organ. Manag.* **2008**, *22*, 586–598. [[CrossRef](#)]
56. Landry, S.; Beaulieu, M.; Roy, J. Strategy Deployment in Healthcare Services: A Case Study Approach. *Technol. Forecast. Soc. Change* **2016**, *113*, 429–437. [[CrossRef](#)]
57. Layton, D.; Bloom, N.; Homkes, R.; Sadun, R. *Management in Healthcare: Why Good Practice Really Matters*; Stephen Dorgan McKinsey & Company: London, UK, 2010; 28p.
58. McKone-Sweet, K.E.; Hamilton, P.; Willis, S.B. The Ailing Healthcare Supply Chain: A Prescription for Change. *J. Supply Chain Manag.* **2005**, *41*, 4–17. [[CrossRef](#)]
59. Budgett, A.; Gopalakrishnan, M.; Schneller, E. Procurement in Public & Private Hospitals in Australia and Costa Rica—A Comparative Case Study. *Health Syst.* **2017**, *6*, 56–67. [[CrossRef](#)]

60. Iandolo, F.; Vito, P.; Fulco, I.; Loia, F. From Health Technology Assessment to Health Technology Sustainability. *Sustainability* **2018**, *10*, 4748. [CrossRef]
61. Karliner, J.; Guenther, R. The Global Green and Healthy Hospitals Agenda. Available online: <https://noharm-global.org/issues/global/global-green-and-healthy-hospitals-agenda> (accessed on 23 November 2022).
62. Moldovan, F.; Blaga, P.; Moldovan, L.; Bataga, T. An Innovative Framework for Sustainable Development in Healthcare: The Human Rights Assessment. *Int. J. Environ. Res. Public Health* **2022**, *19*, 2222. [CrossRef]
63. Tooranloo, H.S.; Karimi, S.; Vaziri, K. Analysis of the Factors Affecting Sustainable Electronic Supply Chains in Healthcare Centers: An Interpretive-Structural Modeling Approach. *Inf. Resour. Manag. J.* **2018**, *31*, 23–43. [CrossRef]
64. World Health Organization. Healthy Hospitals, Healthy Planet, Healthy People. Available online: <https://www.who.int/publications/m/item/healthy-hospitals-healthy-planet-healthy-people> (accessed on 23 November 2022).
65. Kotter, J.P. *Leading Change*; Harvard Business Press: Harvard, MA, USA, 2012; ISBN 978-1-4221-8643-5.
66. Gilmartin, M.J.; D'Aunno, T.A. 8 Leadership Research in Healthcare. *Acad. Manag. Ann.* **2007**, *1*, 387–438. [CrossRef]
67. Hackman, J.R.; Hackman, R.J. *Leading Teams: Setting the Stage for Great Performances*; Harvard Business Press: Harvard, MA, USA, 2002; ISBN 978-1-57851-333-8.
68. Kelle, P.; Woosley, J.; Schneider, H. Pharmaceutical Supply Chain Specifics and Inventory Solutions for a Hospital Case. *Oper. Res. Health Care* **2012**, *1*, 54–63. [CrossRef]
69. Ketprapakorn, N.; Kantabutra, S. Sustainable Social Enterprise Model: Relationships and Consequences. *Sustainability* **2019**, *11*, 3772. [CrossRef]
70. Suriyankietkaew, S.; Kungwanpongpan, P. Strategic Leadership and Management Factors Driving Sustainability in Health-Care Organizations in Thailand. *J. Health Organ. Manag.* **2021**, *36*, 448–468. [CrossRef]
71. Chi, Y.; Yu, C.; Qi, X.; Xu, H. Knowledge Management in Healthcare Sustainability: A Smart Healthy Diet Assistant in Traditional Chinese Medicine Culture. *Sustainability* **2018**, *10*, 4197. [CrossRef]
72. Karamat, J.; Shurong, T.; Ahmad, N.; Afridi, S.; Khan, S.; Mahmood, K. Promoting Healthcare Sustainability in Developing Countries: Analysis of Knowledge Management Drivers in Public and Private Hospitals of Pakistan. *Int. J. Environ. Res. Public Health* **2019**, *16*, 508. [CrossRef]
73. Bloom, N.; Propper, C.; Seiler, S.; Van Reenen, J. The Impact of Competition on Management Quality: Evidence from Public Hospitals. *Rev. Econ. Stud.* **2015**, *82*, 457–489. [CrossRef]
74. Goodall, A.H. Physician-Leaders and Hospital Performance: Is There an Association? *Soc. Sci. Med.* **2011**, *73*, 535–539. [CrossRef]
75. Mascia, D.; Piconi, I. Career Histories and Managerial Performance of Health Care Chief Executive Officers: An Empirical Study in the Italian National Health Service. *Health Care Manag. Rev.* **2013**, *38*, 71–80. [CrossRef] [PubMed]
76. Witman, Y.; Smid, G.A.C.; Meurs, P.L.; Willems, D.L. Doctor in the Lead: Balancing between Two Worlds. Available online: <https://journals.sagepub.com/doi/abs/10.1177/1350508410380762> (accessed on 23 November 2022).
77. Keroack, M.A.; Youngberg, B.J.; Ceresse, J.L.; Krsek, C.; Prellwitz, L.W.; Trevelyan, E.W. Organizational Factors Associated with High Performance in Quality and Safety in Academic Medical Centers. *Acad. Med.* **2007**, *82*, 1178–1186. [CrossRef]
78. Reinertsen, J.L.; Gosfield, A.; Rupp, W. Engaging Physicians in Ashared Quality Agenda. *IHI Innov. Ser. White Pap.* **2007**, *65*, 1–48.
79. Spurgeon, P.; Mazelan, P.M.; Barwell, F. Medical Engagement: A Crucial Underpinning to Organizational Performance. *Health Serv. Manag. Res.* **2011**, *24*, 114–120. [CrossRef]
80. Cafagna, G.; Seghieri, C.; Vainieri, M.; Nuti, S. A Turnaround Strategy: Improving Equity in Order to Achieve Quality of Care and Financial Sustainability in Italy. *Int. J. Equity Health* **2018**, *17*, 169. [CrossRef]
81. Mannion, R.; Davies, H.T.O.; Marshall, M.N. Cultural Characteristics of “High” and “Low” Performing Hospitals. *J. Health Organ. Manag.* **2005**, *19*, 431–439. [CrossRef]
82. Atun, R.A. Doctors and Managers Need to Speak a Common Language. *BMJ* **2003**, *326*, 655. [CrossRef]
83. Curry, L.A.; Spatz, E.; Cherlin, E.; Thompson, J.W.; Berg, D.; Ting, H.H.; Decker, C.; Krumholz, H.M.; Bradley, E.H. What Distinguishes Top-Performing Hospitals in Acute Myocardial Infarction Mortality Rates? *Ann. Intern. Med.* **2011**, *154*, 384–390. [CrossRef]
84. Detmer, D. Clinician-Managers: The ‘Boundary Spanners’ of Health Services. *J. Health Serv. Res. Policy* **2000**, *5*, 197–198. [CrossRef]
85. Harrison, R.; Miller, S. The Contribution of Clinical Directors to the Strategic Capability of the Organization. *Br. J. Manag.* **1999**, *10*, 23–39. [CrossRef]
86. Lister, H.E.; Mostert, K.; Botha, T.; van der Linde, S.; van Wyk, E.; Rocher, S.-A.; Laing, R.; Wu, L.; Müller, S.; des Tombe, A.; et al. South African Healthcare Professionals’ Knowledge, Attitudes, and Practices Regarding Environmental Sustainability in Healthcare: A Mixed-Methods Study. *Int. J. Environ. Res. Public Health* **2022**, *19*, 10121. [CrossRef]
87. Rodriguez, R.; Svensson, G.; Eriksson, D. Organizational Positioning and Planning of Sustainability Initiatives: Logic and Differentiators. *Int. J. Public Sect. Manag.* **2018**, *31*, 755–774. [CrossRef]
88. Fally, M.; Møller, M.E.E.; Anhøj, J.; Tarp, B.; Benfield, T.; Ravn, P. Sustainability of Healthcare Improvements for Patients Admitted with Community-Acquired Pneumonia: Follow-up Data from a Quality Improvement Project. *BMJ Open Qual.* **2022**, *11*, e001737. [CrossRef] [PubMed]
89. Kukreja, P.; Sheehan, A.H.; Riggins, J. Use of Social Media by Pharmacy Preceptors. *Am. J. Pharm. Educ.* **2011**, *75*, 176. [CrossRef]
90. Adams, S.A. Blog-Based Applications and Health Information: Two Case Studies That Illustrate Important Questions for Consumer Health Informatics (CHI) Research. *Int. J. Med. Inf.* **2010**, *79*, e89–e96. [CrossRef]

91. Faggini, M.; Cosimato, S.; Nota, F.D.; Nota, G. Pursuing Sustainability for Healthcare through Digital Platforms. *Sustainability* **2019**, *11*, 165. [[CrossRef](#)]
92. Hwang, K.O.; Offenbacher, A.J.; Green, A.P.; Cannon-Diehl, M.R.; Richardson, O.; Bernstam, E.V.; Thomas, E.J. Social Support in an Internet Weight Loss Community. *Int. J. Med. Inf.* **2010**, *79*, 5–13. [[CrossRef](#)]
93. Kim, K.; Kwon, N. Profile of E-Patients: Analysis of Their Cancer Information-Seeking From a National Survey. *J. Health Commun.* **2010**, *15*, 712–733. [[CrossRef](#)]
94. Russo, G.; Tartaglione, A.M.; Cavacece, Y. Empowering Patients to Co-Create a Sustainable Healthcare Value. *Sustainability* **2019**, *11*, 1315. [[CrossRef](#)]
95. Chou, W.-Y.S.; Hunt, Y.M.; Beckjord, E.B.; Moser, R.P.; Hesse, B.W. Social Media Use in the United States: Implications for Health Communication. *J. Med. Internet Res.* **2009**, *11*, e1249. [[CrossRef](#)]
96. Conte, F.; Vitale, P.; Vollero, A.; Siano, A. Designing a Data Visualization Dashboard for Managing the Sustainability Communication of Healthcare Organizations on Facebook. *Sustainability* **2018**, *10*, 4447. [[CrossRef](#)]
97. Kontos, E.Z.; Emmons, K.M.; Puleo, E.; Viswanath, K. Communication Inequalities and Public Health Implications of Adult Social Networking Site Use in the United States. *J. Health Commun.* **2010**, *15*, 216–235. [[CrossRef](#)] [[PubMed](#)]
98. Scanzfeld, D.; Scanzfeld, V.; Larson, E.L. Dissemination of Health Information through Social Networks: Twitter and Antibiotics. *Am. J. Infect. Control* **2010**, *38*, 182–188. [[CrossRef](#)] [[PubMed](#)]
99. Correa, T.; Hinsley, A.W.; de Zúñiga, H.G. Who Interacts on the Web?: The Intersection of Users' Personality and Social Media Use. *Comput. Hum. Behav.* **2010**, *26*, 247–253. [[CrossRef](#)]
100. Sanford, A.A. "I Can Air My Feelings Instead of Eating Them": Blogging as Social Support for the Morbidly Obese. *Commun. Stud.* **2010**, *61*, 567–584. [[CrossRef](#)]
101. Takahashi, Y.; Uchida, C.; Miyaki, K.; Sakai, M.; Shimbo, T.; Nakayama, T. Potential Benefits and Harms of a Peer Support Social Network Service on the Internet for People With Depressive Tendencies: Qualitative Content Analysis and Social Network Analysis. *J. Med. Internet Res.* **2009**, *11*, e1142. [[CrossRef](#)] [[PubMed](#)]
102. Friedman, D.B.; Koskan, A.; Rose, I.D. Prostate Cancer Guidelines on Web 2.0-Based Sites: The Screening Dilemma Continues Online. *J. Cancer Educ.* **2011**, *26*, 188–193. [[CrossRef](#)]
103. Orizio, G.; Schulz, P.; Gasparotti, C.; Caimi, L.; Gelatti, U. The World of E-Patients: A Content Analysis of Online Social Networks Focusing on Diseases. *Telemed. e-Health* **2010**, *16*, 1060–1066. [[CrossRef](#)]
104. Tian, Y. Organ Donation on Web 2.0: Content and Audience Analysis of Organ Donation Videos on YouTube. *Health Commun.* **2010**, *25*, 238–246. [[CrossRef](#)] [[PubMed](#)]
105. Wadmann, S.; Hoeyer, K. Dangers of the Digital Fit: Rethinking Seamlessness and Social Sustainability in Data-Intensive Healthcare. *Big Data Soc.* **2018**, *5*, 2053951717752964. [[CrossRef](#)]
106. Dunne, H.; Rizan, C.; Jones, A.; Bhutta, M.F.; Taylor, T.; Barna, S.; Taylor, C.J.; Okorie, M. Effectiveness of an Online Module: Climate-Change and Sustainability in Clinical Practice. *BMC Med. Educ.* **2022**, *22*, 682. [[CrossRef](#)]
107. Chellaiyan, V. Telemedicine: A Paradigm Shift in Healthcare in the Wake of COVID-19 in India. *J. Clin. Diagn. Res.* **2020**, *14*, LA01–LA03. [[CrossRef](#)]
108. Faezipour, M.; Faezipour, M. Sustainable Smartphone-Based Healthcare Systems: A Systems Engineering Approach to Assess the Efficacy of Respiratory Monitoring Apps. *Sustainability* **2020**, *12*, 5061. [[CrossRef](#)]
109. Lo Presti, L.; Testa, M.; Marino, V.; Singer, P. Engagement in Healthcare Systems: Adopting Digital Tools for a Sustainable Approach. *Sustainability* **2019**, *11*, 220. [[CrossRef](#)]
110. McGain, F.; Naylor, C. Environmental Sustainability in Hospitals—A Systematic Review and Research Agenda. *J. Health Serv. Res. Policy* **2014**, *19*, 245–252. [[CrossRef](#)]
111. Newbould, L.; Ariss, S.; Mountain, G.; Hawley, M.S. Exploring Factors That Affect the Uptake and Sustainability of Videoconferencing for Healthcare Provision for Older Adults in Care Homes: A Realist Evaluation. *BMC Med. Inform. Decis. Mak.* **2021**, *21*, 13. [[CrossRef](#)] [[PubMed](#)]
112. Remondino, M. Information Technology in Healthcare: HHC-MOTES, a Novel Set of Metrics to Analyse IT Sustainability in Different Areas. *Sustainability* **2018**, *10*, 2721. [[CrossRef](#)]
113. Visconti, R.M.; Martiniello, L.; Morea, D.; Gebennini, E. Can Public-Private Partnerships Foster Investment Sustainability in Smart Hospitals? *Sustainability* **2019**, *11*, 1704. [[CrossRef](#)]
114. Emilsson, M.; Ernstson, U.; Gustavsson, L.; Svensson, A. Sustainable Innovations in Small Enterprises for the Transformation of the Primary Healthcare Sector. *Sustainability* **2020**, *12*, 6391. [[CrossRef](#)]
115. Ianculescu, M.; Alexandru, A. Microservices—A Catalyzer for Better Managing Healthcare Data Empowerment. *Stud. Inform. Control* **2020**, *29*, 231–242. [[CrossRef](#)]
116. Landry, S.; Philippe, R. How Logistics Can Service Healthcare. *Supply Chain Forum Int. J.* **2004**, *5*, 24–30. [[CrossRef](#)]
117. Nabelsi, V.; Gagnon, S. Information Technology Strategy for a Patient-Oriented, Lean, and Agile Integration of Hospital Pharmacy and Medical Equipment Supply Chains. *Int. J. Prod. Res.* **2017**, *55*, 3929–3945. [[CrossRef](#)]
118. Pan, Z.X.; Pokharel, S. Logistics in Hospitals: A Case Study of Some Singapore Hospitals. *Leadersh. Health Serv.* **2007**, *20*, 195–207. [[CrossRef](#)] [[PubMed](#)]
119. Poba-Nzaou, P.; Kume, N.; Kobayashi, S. Developing and Sustaining an Open Source Electronic Health Record: Evidence from a Field Study in Japan. *J. Med. Syst.* **2020**, *44*, 159. [[CrossRef](#)] [[PubMed](#)]

120. Rakovska, M.A.; Stratieva, S.V. A Taxonomy of Healthcare Supply Chain Management Practices. *Supply Chain Forum Int. J.* **2018**, *19*, 4–24. [[CrossRef](#)]
121. Romero, A.; Lefebvre, E. Combining Barcodes and RFID in a Hybrid Solution to Improve Hospital Pharmacy Logistics Processes. *Int. J. Inf. Technol. Manag.* **2015**, *14*, 97–123. [[CrossRef](#)]
122. Beaulieu, M.; Roy, J.; Landry, S. L'impartition Des Activités Logistiques Dans Le Secteur de La Santé: Les Leçons d'une Expérience Canadienne. *Can. J. Adm. Sci./Rev. Can. Sci. L'adm.* **2018**, *35*, O68–O82. [[CrossRef](#)]
123. Beaulieu, M.; Bentahar, O. Digitalization of the Healthcare Supply Chain: A Roadmap to Generate Benefits and Effectively Support Healthcare Delivery. *Technol. Forecast. Soc. Change* **2021**, *167*, 120717. [[CrossRef](#)]
124. Schutte, C.; Niemann, W.; Kotzé, T. Exploring Relationship Power in Supply Chain Sustainability Practices: A Case Study of A South African Hospital Group. *S. Afr. J. Ind. Eng.* **2022**, *33*, 154–176. [[CrossRef](#)]
125. Velasco, N.; Moreno, J.-P.; Rebolledo, C. Logistics Practices in Healthcare Organizations in Bogota. *Acad. Rev. Latinoam. Adm.* **2018**, *31*, 519–533. [[CrossRef](#)]
126. Adebajo, D.; Laosirihongthong, T.; Samaranyake, P. Prioritizing Lean Supply Chain Management Initiatives in Healthcare Service Operations: A Fuzzy AHP Approach. *Prod. Plan. Control* **2016**, *27*, 953–966. [[CrossRef](#)]
127. Damoah, I.S.; Ayakwah, A.; Tingbani, I. Artificial Intelligence (AI)-Enhanced Medical Drones in the Healthcare Supply Chain (HSC) for Sustainability Development: A Case Study. *J. Clean. Prod.* **2021**, *328*, 129598. [[CrossRef](#)]
128. Hussain, M.; Ajmal, M.M.; Gunasekaran, A.; Khan, M. Exploration of Social Sustainability in Healthcare Supply Chain. *J. Clean. Prod.* **2018**, *203*, 977–989. [[CrossRef](#)]
129. Hussain, M.; Khan, M.; Ajmal, M. Exploration and Assessment of the Motivators of Social Sustainability in Healthcare Supply Chains: Multistakeholder's Perspective. *Sustain. Dev.* **2019**, *27*, 573–586. [[CrossRef](#)]
130. Khan, M.; Hussain, M.; Gunasekaran, A.; Ajmal, M.M.; Helo, P.T. Motivators of Social Sustainability in Healthcare Supply Chains in the UAE-Stakeholder Perspective. *Sustain. Prod. Consum.* **2018**, *14*, 95–104. [[CrossRef](#)]
131. Khosravi, F.; Izbirak, G. A Stakeholder Perspective of Social Sustainability Measurement in Healthcare Supply Chain Management. *Sustain. Cities Soc.* **2019**, *50*, 101681. [[CrossRef](#)]
132. Kritchanchai, D.; Hoer, S.; Engseth, P. Develop a Strategy for Improving Healthcare Logistics Performance. *Supply Chain Forum Int. J.* **2018**, *19*, 55–69. [[CrossRef](#)]
133. Nsikan, J.; Affiah, E.A.; Briggs, I.; Koko, N. Sustainable Supplier Selection Factors and Supply Chain Performance in the Nigerian Healthcare Industry. *J. Transp. Supply Chain Manag.* **2022**, *16*, 8. [[CrossRef](#)]
134. Rodriguez, R.; Svensson, G.; Otero-Neira, C. Future Direction of Sustainable Development in Private Hospitals: General Similarities and Specific Differences. *J. Bus. Ind. Mark.* **2019**, *35*, 537–550. [[CrossRef](#)]
135. Rodriguez, R.; Svensson, G.; Eriksson, D. Priorities Determining Future Directions of Sustainable Development in Business Models of the Healthcare Industry-Findings and Framework. *Sustainability* **2021**, *13*, 6507. [[CrossRef](#)]
136. Scavarda, A.; Dau, G.L.; Scavarda, L.F.; Korzenowski, A.L. A Proposed Healthcare Supply Chain Management Framework in the Emerging Economies with the Sustainable Lenses: The Theory, the Practice, and the Policy. *Resour. Conserv. Recycl.* **2019**, *141*, 418–430. [[CrossRef](#)]
137. González González, A.; García-Sanz-Calcedo, J.; Salgado, D.R. A Quantitative Analysis of Final Energy Consumption in Hospitals in Spain. *Sustain. Cities Soc.* **2018**, *36*, 169–175. [[CrossRef](#)]
138. Zhu, Q.; Johnson, S.; Sarkis, J. Lean Six Sigma and Environmental Sustainability: A Hospital Perspective. *Supply Chain Forum Int. J.* **2018**, *19*, 25–41. [[CrossRef](#)]
139. Laureani, A.; Antony, J. Standards for Lean Six Sigma Certification. *Int. J. Product. Perform. Manag.* **2012**, *61*, 110–120. [[CrossRef](#)]
140. Morgan, J.; Brenig-Jones, M. *Lean Six Sigma For Dummies*; John Wiley & Sons: Hoboken, NJ, USA, 2015; ISBN 978-1-119-06735-1.
141. Singh, P. Lean in Healthcare Organization: An Opportunity for Environmental Sustainability. *Benchmark.—Int. J.* **2019**, *26*, 205–220. [[CrossRef](#)]
142. Wheat, B.; Mills, C.; Carnell, M. *Leaning Into Six Sigma: A Parable of the Journey to Six Sigma and a Lean Enterprise*, 1st ed.; McGraw Hill: New York, NY, USA, 2003; ISBN 978-0-07-141432-6.
143. Faezipour, M.; Ferreira, S. A System Dynamics Approach for Sustainable Water Management in Hospitals. *IEEE Syst. J.* **2018**, *12*, 1278–1285. [[CrossRef](#)]
144. Gómez-Chaparro, M.; García Sanz-Calcedo, J.; Armenta-Márquez, L. Study on the Use and Consumption of Water in Spanish Private Hospitals as Related to Healthcare Activity. *Urban Water J.* **2018**, *15*, 601–608. [[CrossRef](#)]
145. Victorian Government Department of Health. *Guidelines for Water Reuse and Recycling in Victorian Health Care Facilities*; Victorian Government Department of Health: Melbourne, VIC, Australia, 2009; 58p.
146. McGain, F. Sustainable Hospitals? An Australian Perspective. *Perspect. Public Health* **2010**, *130*, 19–20. [[CrossRef](#)]
147. Meleko, A.; Tesfaye, T.; Henok, A. Assessment of Healthcare Waste Generation Rate and Its Management System in Health Centers of Bench Maji Zone. *Ethiop. J. Health Sci.* **2018**, *28*, 125–134. [[CrossRef](#)]
148. Ashourian, K.T.; Young, S.T. Greening Healthcare: The Current State of Sustainability in Manhattan's Hospitals. *Sustainability—J. Rec.* **2016**, *9*, 73–79. [[CrossRef](#)]
149. Doiphode, S.M.; Hinduja, I.N.; Ahuja, H.S. Developing a Novel, Sustainable and Beneficial System for the Systematic Management of Hospital Wastes. Available online: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5071971/> (accessed on 23 November 2022).

150. Li, H.; Li, J.; Zhang, Z.; Cao, X.; Zhu, J.; Chen, W. Establishing an Interval-Valued Fuzzy Decision-Making Method for Sustainable Selection of Healthcare Waste Treatment Technologies in the Emerging Economies. *J. Mater. Cycles Waste Manag.* **2020**, *22*, 501–514. [[CrossRef](#)]
151. Li, H.; Dietl, H.; Li, J. Identifying Key Factors Influencing Sustainable Element in Healthcare Waste Management Using the Interval-Valued Fuzzy DEMATEL Method. *J. Mater. Cycles Waste Manag.* **2021**, *23*, 1777–1790. [[CrossRef](#)]
152. Mekan, A.; Fadili, A. Sustainability Assessment of Healthcare Waste Treatment Systems Using Surrogate Weights and PROMETHEE Method. *Waste Manag. Res.* **2021**, *39*, 73–82. [[CrossRef](#)] [[PubMed](#)]
153. Maniero Moreira, A.M.; Risso Guenther, W.M. Healthcare Waste Management in a Brazilian Higher Education and Health Research Institution. In *Sustainability on University Campuses: Learning, Skills Building and Best Practices*; Filho, W.L., Bardi, U., Eds.; Springer International Publishing Ag: Cham, Switzerland, 2019; pp. 321–338. ISBN 978-3-030-15864-4.
154. Puska, A.; Stevic, Z.; Pamucar, D. Evaluation and Selection of Healthcare Waste Incinerators Using Extended Sustainability Criteria and Multi-Criteria Analysis Methods. *Environ. Dev. Sustain.* **2022**, *24*, 11195–11225. [[CrossRef](#)]
155. Ranjbari, M.; Esfandabadi, Z.S.; Shevchenko, T.; Chassagnon-Haned, N.; Peng, W.; Tabatabaei, M.; Aghbashlo, M. Mapping Healthcare Waste Management Research: Past Evolution, Current Challenges, and Future Perspectives towards a Circular Economy Transition. *J. Hazard. Mater.* **2022**, *422*, 126724. [[CrossRef](#)] [[PubMed](#)]
156. Sepetis, A.; Zaza, P.N.; Rizos, F.; Bagos, P.G. Identifying and Predicting Healthcare Waste Management Costs for an Optimal Sustainable Management System: Evidence from the Greek Public Sector. *Int. J. Environ. Res. Public Health* **2022**, *19*, 9821. [[CrossRef](#)]
157. Torkayesh, A.E.; Vandchali, H.R.; Tirkolaei, E.B. Multi-Objective Optimization for Healthcare Waste Management Network Design with Sustainability Perspective. *Sustainability* **2021**, *13*, 8279. [[CrossRef](#)]
158. Chauhan, A. Framework for Sustainable Healthcare Waste Management in India. In *Transforming Organizations through Flexible Systems Management*; Suri, P.K., Yadav, R., Eds.; Flexible Systems Management; Springer: Singapore, 2020; pp. 189–204. ISBN 9789811396403.
159. Ferronato, N.; Ragazzi, M.; Torrez Elias, M.S.; Gorrity Portillo, M.A.; Guisbert Lizarazu, E.G.; Torretta, V. Application of Healthcare Waste Indicators for Assessing Infectious Waste Management in Bolivia. *Waste Manag. Res.* **2020**, *38*, 4–18. [[CrossRef](#)]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.