

THESIS SUMMARY

Rana Alotaiby

Leadership Competencies, Sustainable Strategies, and Energy Efficiency Initiatives for Driving Organizational Changes in the Healthcare Sector

PhD Dissertation

Supervisors:

Dr. Éva Krenyácz

Dr. Zoltán Csedő

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Department Of Management and Organization

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Table 1. Articles' summary; Research Gaps, Questions, Theory, Findings, and Limitations.. Hiba! A könyvjelző nem létezik.	
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I: Research framework and relevance

My doctoral research focuses on leadership characteristics and managerial dynamics in healthcare organizations through the lens of strategic and operations management and various theoretical perspectives, such as evolutionary economics, sustainability theory, and resource-based view. Montreuil (2023) expresses that healthcare organizations are predisposed to an array of change drivers, such as the global healthcare crisis noted during the COVID-19 pandemic, which can drastically and radically affect their operations. In many instances, changes become necessary in healthcare systems to adjust to patients' growing needs encapsulated in the ever-dynamic demographic alterations, and technological adaptations within sociopolitical and economic contexts (Milella et al., 2021). However, literature evidence also displays diverse critical challenges that come alongside the operational changes in healthcare organizations, including staff resistance and fatigue, and financial and resource constraints among others (Shaik et al., 2023).

These challenges thus call for a well-organized, tactical, and shrewd managerial and leadership approach toward initiating and managing organizational changes (Harrison et al., 2022; Muluneh & Gedifew, 2018). Scholars often emphasize that healthcare organizations have a crucial need for effective management since they make significant contributors to global economic growth (Henke & Martin, 2009; Papanicolas et al., 2018). In the process, healthcare leaders are challenged to employ an array of skills and practices for smooth transitions that consider employee welfare, minimal service disruptions, and sustained productivity (Chatterjee et al., 2023; Kossyva et al., 2023).

This dissertation is developed from the research papers that I previously published in different journal sites:

1. Krenyácz, Éva, & Alotaiby, R. A. M. (2022). Analysis of leadership competencies based on organizational change: Case of education hospitals of Jordan. *Vezetéstudomány Budapest Management Review*, 53(10), 56–67. <https://doi.org/10.14267/VEZTUD.2022.10.05>
2. Alotaiby, R., & Krenyácz, É. (2023). Energy efficiency in healthcare institutions. *Society and Economy*, 45(4), 494-511. <http://dx.doi.org/10.1556/204.2023.00013>
3. Alotaiby, R. A. M., & Krenyácz, É. (2024). Challenges and opportunities in healthcare reforms in pre-and post-COVID-19 crisis: A case of Jordan. *Problems and Perspectives in Management*, 22(1), 80-93. [http://dx.doi.org/10.21511/ppm.22\(1\).2024.08](http://dx.doi.org/10.21511/ppm.22(1).2024.08)

Nevertheless, the other three complete research articles already presented different ideas on the healthcare leadership and healthcare systems management and their competency in sustaining service provision and addressing change drivers from different approaches, including narrative literature review, and qualitative and quantitative empirical investigations.

The first paper, published in 2022, presents an empirical outcome of the investigation that identified the diverse clinical leadership skills, characteristics, and practices, and how they relate to the leaders' demographic features as key drivers for organizational change. The study was conducted in Jordanian educational hospitals and published in a Hungarian journal. In a review, it was noted that leadership characteristics have been implicated in change management by influencing staff mindset through their effective communication competence and attributes (Weintraub & McKee, 2019). As such, this paper argued that healthcare leaders' characteristics hold a critical niche in driving both strategic and operational changes in healthcare organizations.

The second paper explored energy efficiency and utilization in healthcare institutions, as the other cluster of change drivers in healthcare systems, from the perspective of a review. It identifies innovative measures to save energy utilization and offers insights into sustaining future operations. In a relatively recent study, Mousa and Othman (2020) express that green practices may positively influence and sustain healthcare operations over long periods. Hence, the examination of energy utilization has been regarded in this paper as another paramount driver for healthcare change and operation sustainability.

The last paper describes the various challenges and opportunities that arose in Jordanian hospitals during and after the outbreak of COVID-19. This paper uses a qualitative approach to explore these challenges and opportunities as another group of change influencers. Healthcare crises, such as COVID-19, have already been noted in some literature articles as critical influencers of radical organizational change practices (Hughes Spence et al., 2023; Keyworth et al., 2024). Hence, unexpected global disease outbreaks, exemplified by COVID-19 stand out as a critical change driver that needs managerial consideration, as discussed in this research.

Despite the three papers being treated relatedly in this dissertation, it must be noted that these studies present different ideas and are outcomes of different investigations in different time periods but are linked together under the dominant concept of this study, which is leadership dynamicity. Even though these papers may be treated independently since they present a comprehensive format and structure of a research paper, such as the introduction, literature review, methods, results, and conclusion, they are motivated by the same idea of looking at resilience in leadership practices in managing changes or crises in healthcare.

The relevance of this topic can be depicted from the increasing number of journal publications, which emphasize the weight of healthcare management, leadership, and transformation in the dynamic environment of healthcare service delivery (Oner et al., 2014; Zengul et al., 2022). It is out of such dynamicity that robust, vigilant, and adaptable healthcare management practices should be situated. For the same reason, this study focuses on Jordanian healthcare management and the dynamic forces around its strategic and operational management practices as well as leadership competency in handling the revolutionary nature of service demands.

Healthcare is highly dynamic, volatile, and sensitive due to the critical niche it has in human life. However, every healthcare system in every environment of its operation is often subjected to a unique range of factors influencing its operations that need special addresses and solutions. Jordanian healthcare is one such kind that faces an array of challenges in meeting its long-term goals towards meeting the growing healthcare needs and quality, most of which are exacerbated by the influx of Syrian refugees in the country (El Arab & Sagbakken, 2018; Dator et al., 2018). Notable challenges in the Jordanian healthcare system arise from resource constraints, environmental concerns, the ever-rising healthcare costs, and sustainability practices, which affect energy utilization too (Alnsour & Moqbel, 2023; Lahn et al., 2023; Rawabdeh & Khassawneh, 2018; Rawashdeh, 2018).

The steady rising costs in the Jordanian healthcare systems call for strategic solutions that can only be addressed through sensitive and sustainable management and leadership approaches. Rawabdeh and Khassawneh (2018) examine healthcare financing policies and present a steady increase in the costs of healthcare financial demands over the years. Their exposition, which commences in the early 1990s, describes that Jordan initially spent 9.6% of its GDP on healthcare service delivery. Subsequent allocation fell to 8.7% in 2016. Nevertheless, most of the expenditures are footed by

the government (over 65%). The high expenditures also come with a biased picture that Jordanian health expenses go to treatment rather than preventive measures. Nevertheless, this study presents a concern that needs a strategic managerial approach.

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Moreover, the sustainability of the healthcare system operations does not go without sound awareness and concerns over the environmental concern – the safety of the environment. The production of hazardous wastes and the utilization of the natural resources of the environment requires keen consideration of the healthcare systems' management (Blass et al., 2017). Balancing the input and output in terms of resources and wastes aligns with the theoretical concepts of circular economy where business operations need the awareness of the environment and decouple from resource depletion by regenerating natural resources, and at the same time, protecting their sources (Kalmykova et al., 2018; Resnitzky et al., 2021). As Liu et al. (2022) express, the circular economic models are currently applied to ensure environmental sustainability. Again, despite the well-established theoretical perspectives on environmental concerns, there are scanty pieces of evidence

in Jordan regarding the competencies and approaches utilized by healthcare leaders toward meeting the desired sustainability.

A robust, vibrant, and skillful approach to healthcare leadership is necessary in addressing the dynamic changes around healthcare operations. Effective and competent leadership skills are needed to address the internal and external forces that bombard the operations of healthcare systems. Consider the Jordanian context, which is characterized by the ever-changing demographic patterns, shifts in nature and quantity of healthcare demands, socioeconomic alterations, and reform recommendations (Khader et al., 2023), yet with a critical gap in the data-driven evidence about sustainability strategies. Hence, it is likely that the current leadership approaches in the Jordanian healthcare systems have not displayed their competency in addressing the complexities of the sustainability of their operations, which puts a barrier between the integration of healthcare activities and energy-efficient practices.

Therefore, my doctoral research proposes an empirical approach to exploring the current leadership competencies alongside their preparedness to handle healthcare crises. As such, their capacity to handle drastic changes and reforms through skillful change management skills will be investigated. Of central interest is their leaders' ability to navigate through the complex socioeconomic, cultural, policy, and political landscape toward ensuring sustainability in healthcare service delivery. This is relevant in the Jordanian context that strives to elevate its healthcare service delivery and capability with the growing health needs, influenced by the increasing surge of refugees (Dator et al., 2018). Nevertheless, it is arguable that changes and reforms in healthcare organizations are natural and bound to ensue with the changing technological environment, economic changes, and natural unforeseen crises, like Covid-19. Due to the expected and unexpected changes, adequate skills and knowledge in handling them are paramount.

II: Research gaps and research questions

Many studies have been conducted in Jordan to assess various managerial practices and operational reforms, change agents, and readiness for change in the healthcare system and organizations (Alzoubi et al., 2019; Jalghoum et al., 2021; Mrayyan, 2020; Milella et al., 2021). These research studies have pointed out various recent outcomes regarding the ever-evolving nature of healthcare operations. For example, Jalghoum et al. (2021) identified various change drivers in e-health services, including resource availability, policies, privacy issues, and the nature of healthcare institutions, including culture and values. Despite the evidence, some persistent gaps and challenges still need further exploration and research in the Jordanian context. The gaps arise in four domain areas: the specificity of change drivers, inadequate evidence, drivers' sustainability, and comparative view.

It is undeniable that various change drivers have been identified in the literature. However, the specificity of these change drivers is missing in some cases, especially when leadership characteristics are involved. In one of the related studies, Freihat (2021) noted that "this 'individualized consideration' helps manage the change approach that may appear within the reengineering process and cooperate with employees to embrace such change." Their findings pointed toward the implications of leadership characteristics, albeit with a limited focus on the transformational leadership style. Other researchers, including Alkarabsheh et al. (2022), have only given weight to transformational leadership in managing healthcare changes. Yet, Aboramadan et al. (2021) stressed the weight of leadership roles and characteristics in sustaining healthcare operations. This motivates the current study to draw on the various leadership

approaches and characteristics that are core drivers of organizational change in the Jordanian healthcare sector.

Moreover, there is inadequate evidence that links leadership practices as critical healthcare change drivers and the sustainability of the changes. It is apparent that the existing research already identified various change drivers, including economic and health needs (Alqutob et al., 2020; Suleiman et al., 2020). inadequate empirical evidence exists about leadership competencies in navigating and sustaining organizational changes in the Jordanian context.

Moreover, by including other elements, such as environmental factors like energy utilization in change management, there becomes a need to have a comparative view from different economic statuses. The long-term sustainability of these change drivers is poorly explored, giving an incomprehensive view of some unintended consequences of the named change drivers.

Lastly, some of the most informative studies conducted in Jordan about change management have not reflected on the specific frameworks to guide their approach. For instance, research by Jalghoum et al. (2021) about the Jordanian healthcare adoption of the current information system did not consider the critical role of the resource-based view framework in explaining the organizations' approach to introducing new technologies. This approach leaves a gap in the fundamental role of organizational resource utilization and the firm's progress. Indeed, the implications of other theoretical frameworks, such as Penrose's theory of organization development and circular economic view of resource utilization, are under-studied in the Jordanian healthcare system.

Therefore, my dissertation focuses on addressing these gaps by using a set of research questions that explore (1) leadership competencies and characteristics as change drivers in strategically

managing organizational change, (2) understanding the status of energy efficiency and utilization in healthcare institutions, which encompasses energy management, conservation strategies and techniques in hospitals, and (3) exploring the challenges and opportunities brought about by COVID-19 crisis, as environmental factors implicated in healthcare leadership in Jordanian healthcare system. The specific research questions are addressed and highlighted in the subsequent chapters below: II.1, II.2, and II.3.

II.1 Analysis of leadership competencies based on organizational change: Case of education hospitals of Jordan

The first article in my dissertation uses the quantitative approach to examine the healthcare leaders' competencies and behaviours toward addressing organizational changes. This investigation was necessary to provide a narrow picture of the Jordanian healthcare leaders' preparedness to address crises in healthcare operations and sustain the healthcare service delivery activities within the available resources. Moreover, this article draws on three key theoretical concepts – the sustainability theory, circular economics, and resource-based view- to fully explain the fundamentals of leadership practices and competencies in healthcare systems. As such, healthcare leaders' skills, knowledge, and awareness are paramount to understanding future organizational trajectories.

In every organization subjected to internal and external influences, it is expected that changes would naturally occur reflecting on the changing contextual contingencies and the dynamicity of firm growth (Da Ros et al., 2024; Tucker & Cirella, 2018). Having the knowledge of such possibilities, yet with little evidence to explain them in the Jordanian healthcare context, the following two questions surfaced;

RQ1: What are the main leadership characteristics in Educational Hospitals of Jordan?

RQ2: What demographic variables impact leadership characteristics in Educational Hospitals of Jordan?

With the focus on finding answers to these questions, the quantitative article found the various leadership characteristics and practices, including empathy, innovation, and integration, and the sociodemographic factors that affect them, such as the gender and age of the leaders. These quantitative outcomes were further used to guide the subsequent research to understand sustainability approaches exemplified in the energy utilization efficiency avenues. Moreover, according to the chosen research design, the quantitative research outcomes were crucial in feeding the subsequent explorative qualitative study.

II.2 Energy efficiency in healthcare institutions – narrative review

The second article in this study used the narrative review to understand sustainability approaches within the healthcare industry. Energy is an environmental factor that affects leadership approaches in every healthcare operation (Sherman et al., 2020). Indeed, many scholars, over a long time, have acknowledged the significance and value of energy utilization in the healthcare sector and the volatility around its availability and sustainability (Auni3n-Villa et al., 2021; Bawaneh et al., 2019). In the previous studies, Ňongradac et al. (2012) acknowledged the intensifying attention of energy optimization in large industries, such as healthcare, for sustainable operations. Therefore, whenever a question of circular economy emerges in the healthcare sector, one of the critical issues that stand out is the energy utilization and sustainability plan. Organizations with competent leaders would thus create effective strategies for optimizing their energy utilization activities, reflecting the need to understand leadership competencies as the driving forces.

The narrative review focuses on two research questions:

RQ1: What is the status of energy efficiency and utilization in healthcare institutions?

RQ2: What are the energy management, conservation strategies, and techniques in hospitals?

Through an exploration of the existing literature sources, the responses to these questions highlight the various energy optimization approaches in multiple places, reflecting on the questions about technology-driven management practices in Jordan regarding energy utilization. This review identified various techniques and approaches healthcare organizations use to optimize their energy utilization, such as renewable energy sources to sustain the available resources in a circular economic design. Outstandingly, some of the most current studies, such as Fang (2023) stress green energy as the most sustainable energy source in healthcare. Most importantly, the outcome of the review article and the quantitative research study highlights the essence of competent, flexible, and adaptable management practices in sustaining healthcare operations, including unexpected crises.

II.3 Challenges and opportunities in healthcare reforms in pre-and post-COVID-19 crisis: A case of Jordan

The third chapter addresses one principal research question whose direction aligns with the quantitative research outcomes in terms of leadership preparedness in managing crises in hospitals. In fact, the qualitative study was designed as a sequel to the outcomes established from the quantitative study – following the sequential explorative research design. The specific leadership characteristics were identified in the quantitative article, which called for further exploration to examine how these leaders deal with the unexpected changes brought about by COVID-19 as an example of the healthcare crisis. In other words, the qualitative study explored the practicality of the Jordanian leaders' competencies in the healthcare crisis to exhibit their skills in sustaining healthcare operations. Accordingly, the challenges and opportunities that arose from the events would be used as windows through which to examine the leaders' capacity to handle crises.

RQ1: Which challenges and opportunities arose in the Jordanian healthcare systems due to the outbreak of COVID-19?

The qualitative investigation identified various challenges and opportunities alongside the health reform strategies. The study identified three key aspects of opportunities, such as improvements in infection control practices, staff education, and patient management, which emerged as exhibits of resilient management techniques, enabled by various management practices, including staff training, monitoring, and provision of social support. At the same time, persistent challenges were noted in terms of heavy workload, stress, fatigue, and shortages among healthcare professionals. These outcomes focused more on the health workers, who, according to the resource-based theory, are crucial components of organizational resources with a capacity to push the organizational performance above the rest of the firms in the industry.

III: Conceptual framework

The unifying point of convergence among the outlined research questions emphasizes leadership as the common concept connecting change management, innovation, and crisis response, ultimately leading a change and shaping the future of healthcare organizations. Therefore, this research presents a classic interconnection between change management, innovation and sustainability, and response to COVID-19, which rightly rotates around leadership practices.

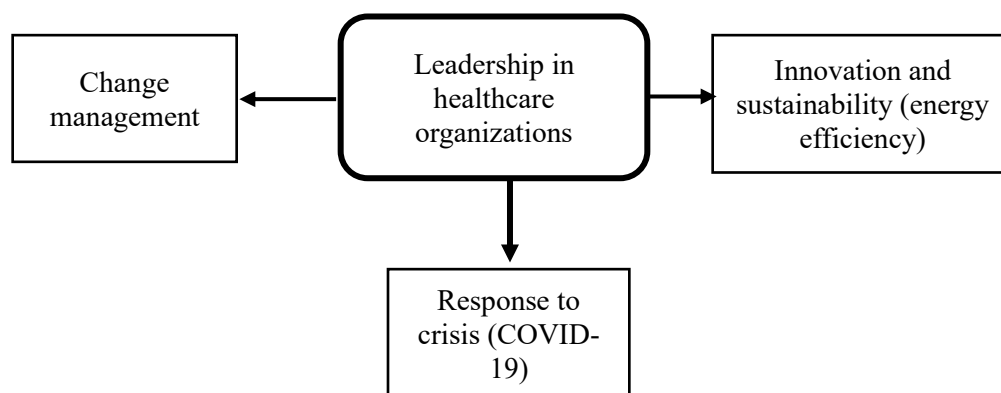


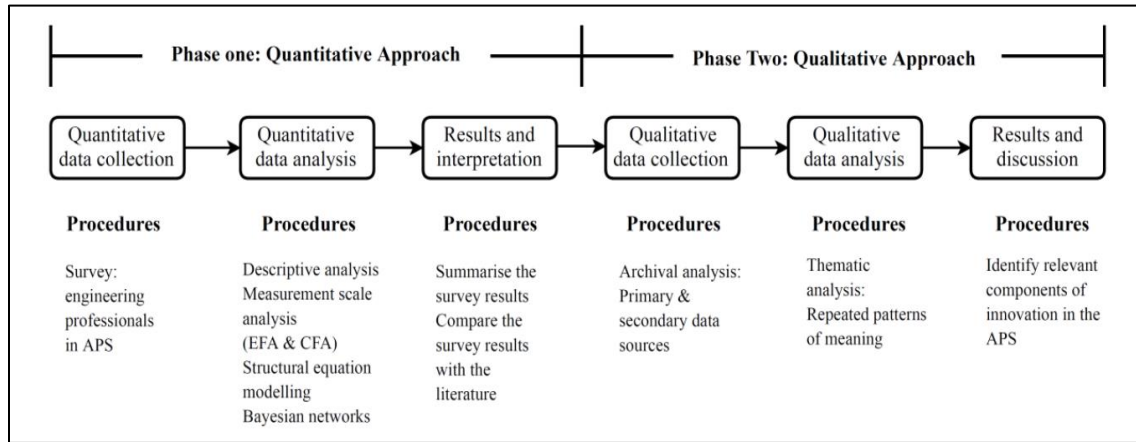
Figure 1. Study conceptual framework

This framework provides an interaction of various concepts that have not been extensively studied in the literature, thereby creating a need to pursue the outlined research questions. For instance, even though leadership has been deeply studied by previous researchers, there is still little evidence regarding leadership competencies in the educational hospitals in Jordan. The gap is even more apparent when examined in the context of crisis management, such as COVID-19 and sustainable development practices. This research would thus provide current evidence on the linkage between competent leadership practices and crisis management, alongside change management, for better preparedness in case of future crises. Moreover, there is scanty research done in Jordan about energy efficiency and utilization in healthcare institutions, especially when linked with healthcare leadership practices. This gap thus surfaces the need to assess the status of energy efficiency and utilization in healthcare institutions.

IV: Research methods

I applied the sequential explanatory design, which combines various methods. Creswell (2013) describes the explanatory sequential mixed method design as a methodological approach that commences with collecting, analyzing, and interpreting the quantitative research data before using the same outcomes to inform the sequel study of qualitative data to explain the outcomes. Scholars explain that this design is used mainly to clarify or expand quantitative results (Draucker et al., 2020; Toyon, 2021). Accordingly, the quantitative research spearheaded the study since I have a better quantitative background, and the qualitative responses were subsequently sought to explain specific phenomena in the preceding quantitative investigation. The overview of the design and flow of processes is presented in Figure 2, and the rationales for methods used in the three articles are explained in the subsequent sections.

Figure 2. Sequential explanatory design



Source: Wipulanusat et al. (2020, p. 489)

IV.1 Narrative literature review - energy efficiency in healthcare institutions

The narrative review was conducted to reflect the basic components of the literature review, including the research question definition, articles search and retrieval, articles scrutiny and data extraction, analysis and synthesis of data, and critical evaluation. This review followed the snowballing approach of article identification and the database technique of retrieving relevant articles. Accordingly, I performed a search for the articles on four sites, including PubMed Central, ProQuest, Science Direct, and CINAHL. The initial search yielded numerous articles of more than 350, which were further trimmed down using specific inclusion criteria. Ultimately, 42 articles were considered to be relevant for the discussion. In addition, the remaining articles were snowballed among the reference lists and general online search engines. In the end, after removing the extra copies of similar articles, a total of 26 articles were used in the discussion, which was done with an integrative approach. Ultimately, two principal research questions were addressed: (1) what is the status of energy efficiency and utilization in healthcare institutions? (2) what are the currently applied energy management, conservation strategies, and techniques in hospitals?

IV.2 Quantitative research - Analysis of leadership competencies based on organizational change

The quantitative research methodology was applied whereby the quantitative data was collected from a selected group of research participants. The descriptive design was used, which avails an insight into the status of a phenomenon without data manipulation (Siedlecki, 2020). Again, the study was conducted as cross-sectional research instead of a longitudinal one based on time limits and the need to assess leadership practices in one instance. The study was conducted as a survey using a questionnaire administered to the selected research participants before conducting data analysis to arrive at a conclusion. The participants consisted of senior employees, middle-level employees, and heads of departments in two teaching hospitals in Jordan. They were included in the study based on their indiscrete willingness to take part without any compensation, and a total of 110 subjects acceded to the call. An already-validated research questionnaire was borrowed from Allam (2016). The questionnaire consisted of 7 leadership dimensions, which had between 7 and 10 items – the total items was 56, which were scored on a 5-point Likert scale. The outcome data was analyzed statistically using the SPSS software, version 22. Three main statistical tools were used –descriptive statistics, ANOVA, and multiple variance analysis. Accordingly, this study sought to answer one main research question: what are the clinical leadership characteristics exhibited by the clinical leaders in Jordanian educational hospitals?

IV.3 Qualitative research - Challenges and opportunities in healthcare reforms in pre-and post-Covid-19 crisis

This study applied semi-structured interviews to explore the healthcare leaders' perceptions of the challenges and opportunities presented by the outbreak crisis of COVID-19. This study commenced with the identification and recruitment of the participants. Accordingly, a total of eleven participants were included in the study. Two of them were working as administrative

managers, two worked as head of nurse managers, one headed the emergency department, another one headed the newly formed COVID-19 department, three were managers in the quality department, one was a human resource manager and lastly, one was a director of the infection control unit.

Data was collected from the research participants using a semi-structured interview guide, which was developed by the researcher. The interviews focused on three main areas; *‘How can the hospital integrate the Jordan healthcare reform into the daily operations?’* *‘Have there been changes in your hospital performance and quality of healthcare service delivery over the time of the COVID-19 crisis?’* and *‘What management practices do you employ in running the daily operations of this hospital before and after the COVID-19 crisis?’* These questions addressed three main issues. In the first two questions, the study sought to establish the extent of changes and modifications brought about by the healthcare crisis. The interviews, which lasted between 40 and 60 minutes, were administered to each participant privately in a face-to-face fashion. The interviews were recorded and transcribed verbatim. Thematic analysis was done on the transcripts, a process that began with the extraction of codes before clustering them together to form themes as described by Clarke and Braun (2017). The thematic outcomes were thus presented according to the study's aim.

The summary of gaps, theories, and findings and limitations are presented in Table 1.

Table 1. Articles’ summary; research gaps, questions, theory, findings and limitations

The aspects of research	Quantitative study: Analysis of leadership competencies based on organizational change	Narrative review: energy efficiency in healthcare institutions	Qualitative study: Challenges and opportunities in healthcare reforms in pre-and post-COVID-19 crisis
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Research gap	Healthcare leadership characteristics and practices in managing organizational change.	Energy optimization techniques in healthcare for sustainable operations.	Healthcare leadership competencies in crisis management.
Research questions	<p>RQ1: What are the clinical leadership characteristics in Educational Hospitals of Jordan?</p> <p>RQ2: What demographic variables impact clinical leadership characteristics in Educational Hospitals of Jordan?</p>	<p>RQ1: What is the status of energy efficiency and utilization in healthcare institutions?</p> <p>RQ2: What are the energy management, conservation strategies, and techniques used in hospitals?</p>	<p>RQ1: Which challenges and opportunities arose in the Jordanian healthcare systems due to the outbreak of COVID-19?</p>
Theory applied	Resource-based view	Resource-based view; sustainability theory; circular economy theory	Resource-based view; Penrose theory of firm growth; organizational ambidexterity; evolutionary economics
Main findings	Healthcare leaders exhibit four main leadership characteristics, including (1) integration, (2) empathy, (3) innovativeness, and (4) adaptive clinical leadership attributes. These characteristics vary among healthcare leaders based on their age and gender, whereby older and male clinical leaders exhibited more desirable leadership qualities than their counterparts.	<p>The amount of energy utilized in the healthcare facilities depends on their design and nature, i.e., the range of services offered and capacity as well as the location of the hospital (for different climatic zones)</p> <p>Hospitals strategize diverse techniques and management conservation strategies for their energy utilization, including (1) control algorithms, actuators, and sensors (2) technology-driven tools like Hybrid Automatic Voltage Control (HAVC) and green building, and (3) renewable sources (green hospital).</p> <p>Healthcare managers apply different sustainable development strategies</p>	<p>Outcomes were noted under four areas – sources of healthcare reforms, challenges presented by COVID-19 crisis, opportunities that arose from the crisis, and managerial practices in managing the crisis.</p> <p>The main sources of reforms were MOH and healthcare managerial decisions.</p> <p>Opportunities for hospital development were noted in terms of infection control, staff education, and patient management strategies. Challenges were noted in terms of heavy workload, stress and fatigue among the staff, and staff shortages.</p> <p>The management applied a mixture of approaches to handle a crisis, including continuous staff</p>

		to minimize the expenses that go to energy utilization.	professional development through training, effective monitoring to ensure compliance with the regulations and protocols, and provision of close social support to deal with the distress and increased service demands.
Limitations	The applied questionnaire did not present a cut-off point to quantify the level of leadership characteristics.	The subjective nature of narrative reviews could lead to bias in interpretations and article selection.	Some of the data used in this study were collected after some of the critical challenges presented by the crisis had been solved, thereby presenting a potential recall bias.

V: Research Results and Contributions

V.1 Analysis of leadership competencies based on organizational change: Case of education hospitals of Jordan

Even though these outcomes were obtained by using a self-declared questionnaire, which may have distortions from the respondents' end, they helped provide significant steps towards addressing some notable research gaps in leadership characteristics in the Jordanian healthcare system. Hence, this section identified specific features among the healthcare leaders in Jordan in regard to organizational change management. These include emphatic and innovative leadership skills and the ability to integrate healthcare changes. These features are promising in terms of addressing the future changes in healthcare in various ways when examined from divergent perspectives. Polychroniou (2009, p. 345) indicates that "empathy and social skills involve one's ability to perceive others' emotions, feelings, and needs and help others to regulate their emotions to achieve desirable goals". Even though some scholars, such as Karnes (2009) argue that

organizations often neglect to instill a strong sense of empathy among the employees, the ingrained quality in leadership traits makes some leaders exhibit it better.

Regarding the qualities of innovation and empathy, this chapter demonstrates that empathic healthcare leaders can ethically connect with the emotional needs of the organization members, thereby rippling a wave of change throughout the organization. At the same time, innovativeness is a trait that leaders can acquire from instinctive qualities or develop from training or influence of the organization's culture (Vaccaro et al., 2012). This chapter has noted that this quality imbues healthcare leaders with the advantage of resiliently springing over hurdles by creating new ideas to overcome technical challenges (Agbor, 2008). In the process, Jordanian leaders with this attribute can effectively overcome barriers to the implementation of healthcare reforms by innovating new ideas for change management and sustainability. Overall, this chapter uses quantitative approaches to show how healthcare leadership qualities may help guide resilience among leaders for better management output.

V.2 Energy efficiency in healthcare institutions

The theoretical contribution of this chapter can be explained well through the lens of sustainable practice and change management practices, which offer ideologies about effective management of healthcare transitions towards more reliable and sustainable energy utilization. This has been critically missing information in the Jordanian healthcare system; hence, the outcomes of this article provide some evidence for understanding and sustaining energy utilization in healthcare through competent leadership practices.

Energy is the core driver in every operation of healthcare organizations, such as equipment usage and machinery operations (Olatomiwa et al., 2018). Regarding sustainable practices, this chapter

discusses that the healthcare system, through the use of renewable energy sources, reduces its environmental footprint and strives towards more reliable energy sources. Again, through the efficient utilization of efficient energy sources, this chapter expresses that optimizing energy usage can significantly help to address the concurrent shortages by minimizing wastage. This idea is well understood from the theoretical perspectives of circular economy, which encompasses the optimal use of organizational resources.

From the angle of change management, this chapter discusses the need and efficiency of healthcare systems to shift their focus from the fundamental consideration of reducing quantity utilization to the quality of energy consumed. As such, the healthcare system is challenged to exhibit efficient transitioning to safer and more reliable energy utilization practices, changing focus from traditional sources to more efficient technology-driven sources. A number of efficient energy utilization practices and techniques are also discussed in this chapter, which are both beneficial to healthcare organizations and national policies on energy usage (Bawaneh et al., 2019). Other concepts, such as site-specific implementation and technological usage, are also outlined and call for a tailored approach to healthcare systems management for a smooth transition towards sustainable organization practices.

V.3 Challenges and opportunities in healthcare reforms in pre-and post-COVID-19 crisis: A case of Jordan

This chapter presented the empirical evidence regarding challenges and opportunities in healthcare reforms before and after the outbreak of COVID-19, with more focus on leadership influence. Little has been done to examine the environmental factors that influence healthcare leadership's decision to implement sustainable service delivery in Jordan. Nevertheless, leadership is considered a central theme in this section as the study examined the healthcare leaders' approach

to managing crises, such as the outbreak of a pandemic. The paper profoundly examines how unexpected crises in healthcare can catalyze reforms that would turn out to be even more sustainable than the traditional proactive reform approaches.

Some of the subthemes beneficial to healthcare systems and hospitals include leadership competency during crisis and sustainability approaches, such as learning from challenges and developing resilient attitudes. The ability to quickly adjust routine operations to accommodate the alterations in healthcare services is an indication of future sustainable change management capacity (Harrison et al., 2022; Sturmberg & Gainsford, 2024). For example, in the qualitative study about challenges and opportunities, healthcare systems can learn about the essence of being ever-prepared, i.e., being flexible in routine operations and able to adapt to new norms in the environment of care. The need to develop a strong spirit of resilience among healthcare leaders is another significant deliverable from this chapter, a concept that Sturmberg (2018) directly relates to the organization's adaptability and toward sustainable delivery of healthcare services. Adaptable and resilient attributes intently imbue healthcare leaders with the capability to withstand expected and unexpected changes and reforms for sustainable and undisrupted service delivery.

Authors Publications in the field

Alotaiby, R. A. M., & Krenyácz, É. (2024). Challenges and opportunities in healthcare reforms in pre-and post-COVID-19 crisis: A case of Jordan. *Problems and Perspectives in Management*, 22(1), 80-93. [http://dx.doi.org/10.21511/ppm.22\(1\).2024.08](http://dx.doi.org/10.21511/ppm.22(1).2024.08)

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