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

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BUSINESS PERSPECTIVES

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CHALLENGES AND OPPORTUNITIES IN HEALTHCARE REFORMS IN PRE- AND POST-COVID-19 CRISIS: A CASE OF JORDAN

Abstract

The COVID-19 crisis presented devastating effects on global healthcare, and Jordan was no exception. During such unforeseen challenges, attention shifts to healthcare leadership and management. However, limited research explored the leadership adjustment in Jordanian hospitals during the pandemic. Therefore, this study examined the challenges and opportunities that arose alongside the outbreak of the pandemic in Jordanian hospitals from the leaders' perspectives. Semi-structured interviews were conducted with healthcare managers in three Jordanian hospitals, focusing on three key areas: healthcare reform integration, the impact of the COVID-19 crisis on hospital performance and healthcare quality, and management practices to handle the pandemic. Interviews were transcribed and thematically analyzed. Eleven hospital managers in seven administrative positions were involved. Three thematic outcomes were noted regarding the integration of healthcare reforms into the Jordanian healthcare system: sources of reforms, challenges of reform integration, and timely integration of the reforms. Positive impacts of the crisis on the Jordanian hospitals' performance and quality of healthcare service delivery, which are considered opportunities, resulted in three thematic outcomes: infection control protocol, staff education, and patient management. On the other hand, three thematic concepts emerged as challenges of the COVID-19 crisis: workload, stress and fatigue, and staff shortages. Lastly, this study noted three thematic outcomes regarding management practices adopted by the Jordanian healthcare systems to deal with the pandemic: staff training, monitoring, and social support.

Keywords	COVID-19, crisis management, healthcare reforms, leadership, healthcare services
JEL Classification	I18, I19, L29

INTRODUCTION

The effects of COVID-19 crisis were directly felt in healthcare, touching different aspects, such as resources, health workers well-being, and leadership adjustment (Ahern & Loh, 2021; Grimes et al., 2022; Sabetkish & Rahmani, 2021). Leadership adjustments, notably in the managerial domain, were necessary to contain these effects (Lobdell et al., 2020). These leaders had to come up with or give direction toward implementing measures to contain the virus. Most of the adaptive measures were formulated by the management before being communicated to individual healthcare facilities in a process that descended from top management to subordinate staff. This approach acknowledges the critical role and diverse managerial approaches of healthcare leadership in crisis management (Aitken & von Treuer, 2021; Csedő & Zavarkó, 2020; Grimes et al., 2022).

The World Health Organization can support the national healthcare systems with crisis management strategies. However, the operations

and management process that proceeded from the WHO communications depends on the health management system of every country. The Ministry of Health recommends many health reforms alongside the management in individual hospitals, who can also develop local strategies (Woiceshyn et al., 2022). Netherless, healthcare systems operate on a delicate balance, weighted by resource availability, calling for critical change management skills to lead single, especially during crises (Csedő et al., 2022). The same phenomenon is likely in Jordan, where resources used in healthcare are often budgeted for at the beginning of every financial year. While Jordan responded well to the COVID-19 crisis, it also faced healthcare management challenges during the pandemic. Some of these challenges included healthcare capacity and access to healthcare services. Hence, unexpected change would lead to overstretched resources and efficiency for every healthcare staff.

1. LITERATURE REVIEW

Hiam and Yates (2021) indicate that healthcare reforms have dotted the history of healthcare leadership and service provision for centuries, and there are several examples where major health reforms instantaneously sprouted after severe plagues, revolutions, and state crises. These reforms align with the theoretical perspective provided by Scheidel (2018), who noted the critical role played by plaques and revolutionary changes in healthcare operations. One of the historically notable healthcare reforms is the development of Universal Health Coverage (UHC), which came up in many countries to help critical health situations brought about by war and calamities (World Health Organization, 2019). Accordingly, Barron and Koonin (2021) have noted the possible rise of significant health reforms during and after COVID-19.

The spontaneous rise of health reforms after the crisis presented by COVID-19 could be speculative; however, the development of micro-reforms and managerial strategies are apparent in every healthcare center during COVID-19 (Collins et al., 2020; Leite et al., 2021). In Jordan, for example, healthcare leaders reinforced hospital hygiene practices to reduce the spread of infections alongside the other recommendations proposed by the WHO (Al-Tammemi, 2020; Singh, 2020). Developing policies and strategies and their subsequent uptake in individual healthcare institutions is a key indicator of change receptivity by Jordanian healthcare systems (Al-Tammemi, 2020; Zaid et al., 2020). Healthcare management and leadership play key catalytic roles (Dent et al., 2013). Nevertheless, the exact principles and approaches Jordanian healthcare leaders use to accept and implement significant healthcare changes and reform policies are yet to be explored.

The 2019 crisis in healthcare brought several changes to healthcare operations, which have subsequently affected the nature and quality of healthcare service delivery (Hu & Zhang, 2021; Korneta et al., 2021; Liu et al., 2022). The effect of the crisis on hospital performance and quality of healthcare service delivery can be traced to the direct effect of the pandemic on health workers and health resources (Ayele et al., 2021; Palinkas et al., 2020). Regarding the effect on health workers, studies indicate that COVID-19 negatively affected the overall psychosocial well-being of healthcare workers (Shreffler et al., 2020; Tan et al., 2020). For instance, Alnazly et al. (2021) in Jordan indicated that participants had displayed extremely severe depression (40%), extremely severe anxiety (60%), and severely distressed behavior (35%). Health workers with these cases of psychological discomfort are less likely to provide adequate services, and hence, this affects the overall performance of the healthcare institution.

The other negative effect of the pandemic is the overstretched healthcare resources. Al-Qudah et al. (2022) examined how COVID-19 crisis affected resource allocation and demands in Jordan's healthcare system. They reported a significant "decrease in the demand for health services at the hospital including admissions, emergency department visits, outpatient clinic visits, surgeries, and radiology during the study period" due to the overstretched resource demands (p. 193). Moreover, the effect of the crisis on healthcare operations can also be noted from its overall effect on economic activities. Several studies have reported the impact of the COVID-19 crisis on

many economic predictors, such as labor and financial market, as well as agriculture, which collectively contribute to the national Gross Domestic Product (Deshpande, 2020; Mishra et al., 2020; Ramakumar, 2020; Kaye et al., 2021).

Despite the negative implications, there are also chances of eventual positive impacts notable in quality of healthcare service delivery. For instance, there have been improvements in hospital antiseptic techniques and increased hospital beds to accommodate situational demands (Kokudo & Sugiyama, 2021). Therefore, it can be hypothesized that there are changes in the hospital performance and quality of healthcare service delivery over COVID-19.

Like any other business setup, healthcare management runs through hierarchical levels whereby the bottom managers receive instructions from the top management structures (Green et al., 2017). Nevertheless, the competencies and behaviors of leaders vary from one healthcare institution to another. Also, it is important to consider that different leaderships styles and techniques resonate with different management practices. For instance, management practices like team motivation and empowerment get along with the transformational leadership approaches (Gabel, 2013; Weberg, 2010). However, the devastating impacts of the COVID-19 crisis could have led to shifts in the leadership principles in healthcare (Csedő et al., 2022).

According to Lobdell et al. (2020), one of the promising ways to deal with the managerial challenges during the 2019 crisis is to improve "prioritizing engaged leadership and emphasize a more team-oriented approach to care delivery and collaboration across institutions" that can establish short-term strategies and long-term plans. The study further recommends implementing regular progress reviews and improving communication, staff empowerment, and training. These changes result from the radiating pressure that the pandemic created beyond the scope of traditional management approaches (Crain et al., 2021).

Fusion cells offer useful tools and have also been named as promising options for effective leadership in managing pandemic challenges in

healthcare systems (Fussell et al., 2009). As such, Lobdell et al. (2020) indicate that healthcare leaders need to decentralize authority, empower their employees, develop avenues that enhance adaptable decision-making, and understand the needs of healthcare stakeholders. Overall, Jordanian healthcare leaders applied diverse management practices before and after the 2019 crisis.

This study aimed to examine and identify the challenges and opportunities that arose alongside the pandemic in Jordanian hospitals to provide current evidence toward making managerial adjustments in providing healthcare services in Jordan.

2. METHODOLOGY

2.1. Research design

This study applied the qualitative research methodology involving semi-structured interviews among the management of selected Jordanian hospitals. Scholars have presented various perspectives on qualitative research methodology and interviews, including the benefits and roles. Interviews have been used in qualitative research as a rich source of collecting data and can be structured, semi-structured, or deeply structured depending on the researchers' interests. This study used semi-structured interviews to explore the managers' perceptions about the challenges and opportunities in healthcare reforms in pre- and post-COVID-19.

2.2. Participants and data collection

The participants involved various managers recruited from various hospitals in Jordan. Eleven managers were selected from three public hospitals in Jordan. These participants were interviewed face-to-face, and each participant was asked questions privately to obtain their perspective on the phenomenon. These participants include two administrative managers, two head nurse managers, three quality department managers, one head of the emergency department, one head of one of the corona departments, one human resource manager, and one infection control director. Each interview lasted for between 40 and 60 minutes.

2.3. Interview guide

Semi-structured interviews were guided by specific questions that focused on three main areas. The interview questions include, '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?' However, there were further sub-questions under each question to gauge the participants' clarity about the item (Appendix A).

2.4. Data coding and analysis

Data were analyzed using a thematic qualitative approach, extracting codes and assembling as themes (Appendix B). Principally, theme analysis involved encoding qualitative information. However, scholars have further explained that the process goes beyond the generation of codes to identification and reporting of patterns, in which the analysis compares "relative frequencies of themes or topics within a data set, looking for code co-occurrence, or graphically displaying code relationships" (Guest et al., 2012, p. 219). Therefore, codes were generated after the specific themes were 'inductively' developed.

The process began with transcription, which was done verbatim. The scripts were then read keenly repeatedly while underlining the key phrases and highlighting the crucial sentences related to the research questions. Henceforth, the key phrases generated the codes, which were manually listed in separate columns (Appendix B). These codes were then grouped under specific themes, further reviewed, and defined according to the research questions. Themes were developed using the three principal interview questions.

3. RESULTS AND DISCUSSION

3.1. Integration of reforms

Concerning the integration of reforms, interviewees were asked whether there were ready strategies to change their hospital operations. To this prompt, three thematic outcomes described the sources of healthcare reforms in Jordanian hospitals. These included the Ministry of Health (MOH) strategies, internal meeting resolutions, and hospital administration. Most respondents explained that they drew their reform policies from the MOH directives before changing hospital operations. For example, PAD2 explained that "…we as administrative managers naturally applied the MOH strategy and quickly responded by preparing the hospital to receive a high number of infected patients." The majority of the respondents made similar expressions during the interview. However, some interviewees also explained that they drew their reform guidelines from internal meeting resolutions. For instance, PHN4 indicated that they often hold internal meetings to discuss hospital operational changes. Lastly, as an example, one interviewee noted that they sometimes utilized reform strategies from the hospital administration.

The interviewees were also asked when and how they transformed the reform strategies into practical operations. To this prompt, three themes were noted: immediate application, staff training, and MOH approval. Most interviewees indicated that they readily apply the MOH policies and strategies as they come. Notably, the MOH policies for infection control were naturally applied by various hospitals in Jordan. However, at the same time, some respondents explained that they sometimes have to make policy change recommendations that suit their hospital and seek MOH approval before implementation.

Additionally, the interview established that the MOH reforms were implemented through staff training and education. Various departments do the training to ensure adequate preparedness among the staff. In some cases, the hospital management first reviews the reform strategies before staff is trained.

The other significant focus area was monitoring and evaluating the policies and policy strategies. This study established four significant evaluation structures from the respondents: hospital management, quality control department, departmental heads, and infection control department. It was noted that the departmental heads, quality con-

trol, and hospital administration monitored and evaluated the policies. However, in some cases, especially those related to the COVID-19 crisis containment, the evaluation and monitoring are done by the infection control department.

Participants were also asked about their perceptions toward the effects of implementing healthcare strategies on the stakeholders, and four themes emerged, including patient satisfaction, staff distress, staff workload, and hospital reputation. Regarding staff distress, it was indicated that implementing the COVID-19 containment strategies led to stress and anxiety among the staff. Another interviewee indicated that stress and anxiety among staff arise when they are isolated or quarantined and cannot meet their family members.

Patient satisfaction was also noted as a significant theme. Implementing the reform strategies during the crisis improved some aspects of patient care services. For instance, PHR8 said, "…I think it was good since we implemented strict and new infection control and quality strategies that reduced the risk of hospital-acquired infections." Accordingly, patients were safer from hospital-acquired infection than before the COVID-19 crisis. However, at the same time, some interviewees indicated a decline in patient satisfaction. For example, PAD1 indicated that "non-COVID-19 patients whose elective surgery was canceled or did not receive the routine healthcare services, I believe they did not feel satisfied." At the same time, as an example, PHN3 also indicated that patients had to wait for the services longer than usual, making them feel weary.

Regarding staff workload, it was noted that healthcare workers felt the effect of implementing change strategies within the Jordanian healthcare system.

3.2. Changes in hospital performance and quality of healthcare service delivery during COVID-19

Many changes were also reported regarding the quality of healthcare service delivery in Jordanian hospitals during the COVID-19 crisis. Accordingly, three themes were noted: infection control protocol, staff education, and patient management pro-

tocols. Infection control mechanisms significantly improved the Jordanian healthcare system following the outbreak of COVID-19. The improvements were due to the policies from MOH. Moreover, there were also changes in staff education and training. The Jordanian hospitals readily trained the staff to comply with the new policies regarding COVID-19 management protocols. Lastly, hospitals also changed their patient management and handling procedures to prioritize patient care. For example, PQD10 indicated that their unit prioritized patient care while many elective surgeries were canceled.

The interviewees were also asked about the problems and opportunities from the operational reforms in Jordanian hospitals during the COVID-19 crisis. Accordingly, six themes emerged, which cover three significant problems and two main opportunities. The thematic problems include workload, stress and fatigue, and staff shortages.

Regarding the problems that emerged, workload was the most frequently mentioned. The interviewees indicated an increased workload with the outbreak of COVID-19 due to an abrupt increase in patients. Moreover, there was a significant staff shortage as some healthcare workers contracted the disease and had to get quarantined. The respondents also mentioned stress and fatigue among staff, which are also linked to the changes in patient handling procedures.

At the same time, Jordanian hospitals had an opportunity for growth during the adjustments to contain the increased number of patients. Three thematic opportunities were noted: more staff, resilience, and training. The interviewees indicated that the management had to hire more health workers to adjust to the additional workload. However, this was only achieved in some hospitals. Nevertheless, additional staff translated to better healthcare services once the patient surge flattened. The second opportunity that emerged from the interview was resilience. These hospitals developed some form of preparedness for such unforeseen crises. For example, PQD9 indicated that they have gained experience in dealing with such cases should they emerge again. At the same time, there is some preparedness to meet such cases since there is better

hospital infrastructure with beds and medical devices. Lastly, staff training was considered an opportunity by the interviewees. The staff was adequately trained in hospital infection control, which they would apply in general hospital operations to reduce cases of infections.

The sustainability of these opportunities was also examined, and the interviewees gave responses clustered under one thematic outcome – staff training. The interviewees indicated that the opportunities are sustainable in the long run since the staff has been trained in the basic concepts regarding the care for highly infectious diseases such as the COVID-19 crisis. For example, PAD1 indicated that the staff was trained through seminars, and the management made a strong positive relationship with them, which is likely to have a long-lasting impact on the training deliverables. These follow-up efforts ensure the sustainability of the noted opportunities.

3.3. Management practices in running the daily operations in Jordanian hospitals before and after the COVID-19 crisis

The last section of the interview examined the management practices and hospital operation procedures at Jordanian hospitals and whether they changed due to the COVID-19 crisis. The interviewees concentrated on the current management practices, which came as a result of crisis management measures. Three themes were noted: staff training, monitoring, and social support.

The management adhered to staff training and education to build a solid foundation of infection control and communication skills within the hospital. For example, PQD10 indicated that they trained the staff after the pandemic's peak to empower them toward daily hospital operations. Regarding staff monitoring, PHN4 indicated that the management improved the monitoring practices to ensure that the staff maintains proper infection control practices. It was also noted that the concept of staff training and education during the pandemic as a critical management practice in Jordan was apparent. Moreover, social support also emerged as a management practice in Jordanian hospitals during COVID-19.

On the same note, for instance, PAD2 indicated that they developed a close relationship with the staff, expressing that they "go to the hospital, talk to all the staff many times… listen to them when they are stressed or complain about the workload." Lastly, monitoring and evaluation of the staff also improved among the hospital management during COVID-19. The monitoring was improved to ensure that the staff adhered to the infection control practices.

Regarding the hospital operation procedures, a number of changes were noted in the interviewees' responses. Under this item, four themes emerged, including patient management policy, staff training, staff recruitment, and infection control practices. Staff training was improved to ensure compliance with the infection control requirements of the MOH policies. It was also reported that there were changes in the infection control practices whereby healthcare workers and visitors had to wear PPE, be vaccinated with two doses, and be double-screened before entering hospitals.

Moreover, there were changes regarding patient discharge policies to accommodate more patients. For example, PAD1 indicated that "we needed space, so we discharged patients who did not need an urgent operation. We closed the external clinics." In another example, PAD2 expressed that they changed patient handling approaches, whereby many patients who needed an unnecessary surgical or elective operation were canceled. These practices were opted to reduce the number of patients due to the strained healthcare resources. On the same note, staff recruitment improved to provide care to more patients. For instance, PAD2 cited hiring more specialized physicians from the army hospital. Staff training was also noted as a significant theme, which emerged from the regular seminars and training that the management delivered to the staff to keep abreast with the MOH policies.

Overal, the COVID-19 crisis completely affected the regular operations of hospitals. The effect was more apparent during the peak when the Jordanian hospitals had an overwhelming patient influx. The healthcare system, notably the leadership, had to develop strategies to contain the changes. Nevertheless, unexpected operational changes have always characterized the healthcare

environment, and some scholars have suggested the application of Artificial Intelligence (AI) to help "focus on risk identification, management, and mitigation" (Chen & Decary, 2020; Dixit et al., 2021). This study noted three significant concepts related to crisis and leadership practices in managing the pandemic in Jordan – the integration of healthcare reforms, adjusting to COVID-19, and implementing new leadership practices.

3.4. Integration of healthcare reform into the daily operations of Jordanian hospitals

Systematically, the Jordanian hospital leaders regularly apply the policies and recommendations or strategies from the MOH. However, this study also established that there are instances when health leaders depend on internal meetings to develop institution-specific strategies, which often rely on leadership contributions. The resolutions from hospital management often shape the daily operations adjusting to the dynamic demands of healthcare services. Nevertheless, Jordanian healthcare leaders regularly monitor the policies and policy strategies from external bodies, such as WHO, before implementing them. The monitoring is performed by hospital management, quality control department, departmental heads, and infection control department.

For the COVID-19 crisis policies communicated by the WHO and MOH, the Jordanian healthcare leaders adopted and implemented various significant changes, which spanned diverse areas, such as surgery and patient admission as well as infection control practices. For example, in Jordan, the elective surgical plans were canceled. In the same way, Smallwood et al. (2023) reflect on the effect of COVID-19 and report canceling elective practices. The same fashion of prioritizing some healthcare practices while canceling others during the pandemic is apparent (Basu et al., 2020; COVIDSurg Collaborative, 2020). Other significant changes include hospital bed expansion, introduction of infection control protocols, and increased working hours.

However, some aspects of the reforms lead to negative outcomes for healthcare workers. For instance, there were consequences of burnout, fatigue, stress, and anxiety among the staff due to the increased workload and the fear of contracting the infection. The psychosocial effects and even burnout are apparent in the literature (Nayyar et al., 2020; Talat et al., 2020; Fatima et al., 2020). There was a significant increase in workload, which called for additional effort from the healthcare workers to address the pressing needs of patients. At the same time, positive outcomes are noted from the reform changes, including quality improvements (infection control) and patient satisfaction.

3.5. Effect of COVID-19 on hospital performance and quality of healthcare service delivery

From the interviews, this study noted that the outbreak of the pandemic and its immediate effects on healthcare systems can be described from two opposite directions that capture the benefits and challenges. There were a few notable challenges, especially among the staff, including staff shortages, increased stress, and burnout. These problems span the managerial and staff challenges. The management has to deal with staff shortages while staff have the burden of increased workload, stress, burnout, and even anxiety. Indeed, studies have equally acknowledged the same phenomenon of increased distress among health workers during a crisis in many regions (Cai et al., 2021; Sriharan et al., 2020). These call for appropriate leadership considerations to care for such challenges.

However, some notable benefits and opportunities came alongside the pandemic, including increased infection control practices, staff training and education on infection control, and increased patients' bed capacity. The need to accommodate more patients borne the opportunities for growth and expansion of care facilities in Jordan. There were increased staff, staff resilience, and training for sustainable change. Still, healthcare leaders have a significant role in maintaining hospital performance and effective leadership skills. According to Fahlevi et al. (2022), strategic leadership style has a significant positive impact on the performance of hospitals.

Effective leadership strategies, such as effective communication, appreciating workers, enhancing teamwork, innovation, and providing moral support during distress, significantly help to address

challenges and capitalize on opportunities in the healthcare settings (Csedő et al., 2022; Fahlevi et al., 2022; Brown, 2020). With such strategies, employees feel included in the operations and smoothly integrate the proposed changes, such as adherence to infection control protocols. In fact, there were significant improvements in patients' management approaches. Significant improvements in patient management have also been noted by other researchers regarding patients' management following the COVID-19 outbreak. For example, the Royal National Orthopaedic Hospital "set a target to deliver 80% of clinics virtually in response to the crisis, to be achieved by March 16, 2020." According to Gilbert et al. (2021, p. 188), the inclusion of virtual consultation systems helped the hospital to care for even more patients.

While the COVID-19 crisis presented devastating challenges to hospitals, there are still some opportunities to seize through functional leadership approaches. Literature acknowledges a significant milestone in hospital technological systems during the crisis (Billingsley, 2020; Jiménez-Rodríguez et al., 2020). Such improvement correlates with the improvements in hospital operations and quality of service delivery, and nurturing them would yield promising outcomes for the future management of unforeseen events in Jordanian healthcare system.

3.6. Adoption of new management practices by Jordanian healthcare system in running the daily operations before and after the COVID-19 crisis

This interview identified three leading management practices by Jordanian healthcare systems in running the daily operations before and after the COVID-19 crisis. The practices involved staff training, staff monitoring, and social support. The management improved the training practices to provide more practical knowledge of handling the challenges presented by the pandemic. The training also ensured resilience and emotional support while operating in the dangerous environments presented by the crisis. Previous studies have also reported the positive impacts of training programs in improving workers' efficiency. According to Bonazza et al. (2021, p. 272), "healthcare leadership program tailored to medical trainees was effective in improving their competency in various leadership domains, and emotional intelligence and teamwork were the most relevant components of the program." Hence, there is a significant benefit to rolling out tailored training programs during the health pandemic.

Moreover, the Jordanian leaders also exhibited vital aspects of employee monitoring. A close look at employees is a critical feature of success in change (Bankar & Gankar, 2013). Jordanian health leaders ensured a close monitoring of their employees. Monitoring is a universally important leadership practice that helps prepare staff for future changes (Noreen et al., 2021). Nevertheless, leaders still need to practice other core components of healthcare leadership, including "commitment to quality improvement and patient safety, ongoing training and education, effective data collection and analytics, and stakeholder communication, engagement, and collaboration" (Doherty et al., 2022, p. 263). These management practices would thus help the management of Jordanian hospitals deal with healthcare reforms smoothly.

Social support was another conspicuous managerial practice noted among Jordanian healthcare management. Due to the negative psychosocial implications of the COVID-19 crisis among healthcare workers, the management came up with programs to encourage hospital staff to face the challenges. According to Smallwood et al. (2023), leaders need to exhibit authentic leadership skills, act timely, and provide their subjects with reliable information and empathy in various situations. As such, the management must involve workers in the major hospital decisions. Post et al. (2022) express that healthcare leaders must incorporate participative leadership when dealing with teams with situations that employees are aware of.

Strudsholm and Vollman (2021) also express the concept of engaging employees in successfully managing change by leveraging communication technologies and creating effective teams. Having teams that easily flow with the

organizational policies and regulations improves organizational productivity. According to Vanichchinchai (2023, p. 430), "leadership and culture have a significant indirect positive impact on process improvement through human resources." On the same note, Santra and Alat (2022) express that healthcare leaders need to exhibit "adaptive leadership competencies such as regulating distress, providing direction, maintaining disciplined action, fostering collaboration, empowering, understanding organizational linkages, strategic vision, and communication skills" (p. 246). Therefore, managing the changes brought about by COVID-19 requires considering diverse aspects of leadership practices for an effective outcome.

CONCLUSION

This study examined the challenges and opportunities that arose alongside the COVID-19 crisis in Jordanian hospitals. Accordingly, the analyzed data identified various opportunities and challenges that emerged alongside the effect of the crisis on Jordanian hospitals. For instance, there were improvements in infection control protocol, staff education, and patient management. At the same time, there were challenges regarding employee work overload, stress and fatigue, and staff shortages. Moreover, it was also noted that there were improvements and effective application of staff training, staff monitoring, and social support as the core aspects of healthcare leadership features.

Based on these observations, there is a need for Jordanian hospital leaders to inculcate adaptive and flexible leadership skills that readily adopt new strategies for effective organizational change. At the same time, there is a need for regular staff training to have adequate preparations in dealing with unforeseen calamities. Nevertheless, there is also still a need to examine the various factors surrounding healthcare reforms during crises through quantitative approaches.

This study suffers from one limitation regarding access to data. Data were collected after some of the critical challenges presented by the COVID-19 pandemic had been solved in the named hospitals. As such, the interviewees could overlook some of them. Nevertheless, the applied leadership strategies to address such challenges still existed within the same leadership structures at the time of data collection.

AUTHOR CONTRIBUTIONS

Conceptualization: Rana Alotaiby, Éva Krenyácz.
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Visualization: Rana Alotaiby, Éva Krenyácz.
Writing – original draft: Rana Alotaiby.
Writing – review & editing: Rana Alotaiby, Éva Krenyácz.

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APPENDIX A

Table A1. Interview questions

Main question	Sub-questions
How can the hospital integrate Jordan's healthcare reform into its daily operations?	Are there ready strategies to change the operations? If yes, when and how would you transform these strategies into practical shape? If the strategies were to be implemented, how would they be monitored and evaluated for success/failure? Do you perceive the implementation of strategies to affect the stakeholders in any way? If yes, how?
Have there been changes in your hospital's performance and quality of healthcare service delivery over COVID-19?	If yes: What were the changes? How did these changes affect the staff and other stakeholders besides patients? Were there effects in any of the following: hospital revenue generation, patient satisfaction, and healthcare service delivery? What problems or opportunities emerged? If there are positive changes, are they sustainable in the long run? If no: Why do you think so? How did you deal with the extra healthcare demands brought about by COVID-19?
What management practices do you employ in running the daily operations of this hospital before and after COVID-19?	Have these practices changed during COVID-19? If yes: How did they change? Were there changes in hospital policies and operation procedures? How did they change?

APPENDIX B

Table B1. Summary of significant thematic outcomes

Topical area	Sub-topics	Thematic outcomes	Codes
Integration of healthcare reforms and strategies	Ready strategies to change their hospital operations	Ministry of Health (MOH) strategies. Internal meeting resolutions Hospital administration	Strategies from the Quality control unit and MOH Internal meeting resolutions Regular meetings Strategies from hospital administration Collaboration between us and MOH
	When and how they transform the reform strategies into practical operations	Immediate application Staff training MOH approval	Instantly, by following the policies and guidelines from the head unit Instant response to implement Ensure preparedness Naturally and immediately First presented to the Ministry of Health for approval and then implemented Staff training, motivation, monitoring, and evaluation Review and implement Apply immediately through staff training
	Monitoring and evaluation of the policies and policy strategies	Hospital management Quality control department Departmental heads and infection control department	Within the unit – mainly the quality control and infection control department Hospital administration, public health, and infection control department Administration department, public health, and infection control department. My responsibility to monitor the performance of my staff All the heads of departments were responsible for monitoring the performance of their team Infection control team and public health team Hospital administration, infection control department, other department managers Hospital management
	Effects of implementing healthcare strategies on the stakeholders	Patients' satisfaction Staff distress Staff workload Hospital reputation	Patient satisfaction, Staff stress and workload Hospital reputation Patients – the quality of care improved Patients (high-quality treatment), staff (increased workload) Pressure and anxiety

Table B1 (cont.). Summary of significant thematic outcomes

Topical area	Sub-topics	Thematic outcomes	Codes
Changes in the hospital performance and quality of healthcare service delivery over the time of COVID-19	Changes in the quality of healthcare service delivery	Infection control protocol Staff education Patients' management protocols	Strict infection control protocol from MOH Complying with the control protocol measures from MOH Staff education Discharged nonemergency patients or those who needed an elective operation to stop the transmission of this virus and maintain their safety Staff training about infection control Performance and service quality were good Quality improved
	Problems and opportunities that emerged from the operational reforms during COVID-19	Problems: Workload Stress and fatigue Staff shortages Opportunities: More staff Staff resilience Training opportunities	Problems Workload increased Staff shortage 24 hours working for the hospital administration. Staff shortage – others (staff) went into quarantine. Stress and fatigue among staff Opportunities Preparedness Improving infection control measures Better hospital infrastructure with staff beds and medical devices Staff training about infection control Hiring of new staff Increase in staff More intensive training course We have more experience Gained experience in how to deal with such cases
	Sustainability of the opportunities	Staff training	Continuing education gives continuous courses such as respiration Infection control department gives weekly lectures and makes inspection rotations of the hospital daily Weekly training courses for infection control policy
Management practices in running the daily operations of the Jordanian hospitals before and after COVID-19	Changes in the management practices at Jordanian hospitals	Improvements in: Staff training Staff monitoring Social support	Staff training about communication skills or infection control Additional training to empower the staff Positive relationships with the staff Listen to staff if they have any issues in the workplace to solve Staff work durations Cancelled the leaves and postponed the retirements or unpaid leave Review and evaluation of hospital policies regarding infection control Close relations with the staff Staff monitoring improved for infection compliance
	Changes in hospital operation procedures	Patient management policy Staff training Staff recruitment Infection control practices	Changes in infection control Use PPE Staff vaccination with two doses and double-screened before entering the hospital Discharge patients who did not need an urgent operation. Close the external clinics Hired specialist physicians from army hospitals Surgical operations or elective operations were canceled Intense training