

Innovation and Thought Leadership by Women in Healthcare during the COVID-19 Pandemic

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Keywords

Women · Healthcare · Administration · Innovation · Thought leadership · COVID-19

Abstract

Introduction: The purpose of this study was to explore the innovation and thought leadership of women in healthcare during the COVID-19 pandemic. **Methods:** We used a phenomenological qualitative design. Participants were women health leaders (WHLs) from multiple hospital administration levels. Their thought leadership profile and innovation were assessed. **Results:** All WHLs indicated awareness of strengths and weaknesses, actively prioritised tasks, showed openness to feedback, and effectively assessed sources of conflict. Most were willing to listen to others, accept advice, and open to change. They were confident of their credibility and comprehensibility of their messages, felt capable of solving problems and handling conflict, utilised a negotiating style, and showed situation-appropriate emotion. They were confident in managing teamwork, allocated resources efficiently, and supported employee work preferences. **Conclusion:** This study provides evidence of WHLs' capabilities in leading healthcare organisations during crisis and the shift to virtual care in Saudi Arabia. Establishing women's leadership programs that focus on placing women in healthcare executive positions is necessary to utilise their untapped potential. Facilitating research on women's leadership capacity, ad-

ministrative skill, and impact on providing the highest quality healthcare would be valuable. Evaluating infrastructure and preparedness of healthcare organisations to expand virtual care and the potential for innovation to sustain performance during crises are crucial. Supportive hospital culture provides confidence to WHLs to manage and achieve organisational goals with relative fluidity.

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Introduction

With the COVID-19 pandemic outbreak, rapid changes were necessary in healthcare [1–3]. Leaders needed to mobilise resources quickly, urge people to adjust to established behaviours, and modify familiar routines. The pandemic required uptake of virtual care mechanisms [1, 4]. Telemedicine and digital technology have demonstrated improvement in health outcomes and the potential to overcome barriers to care, improve access for remote patients, help patients effectively self-manage chronic disease, and revolutionise interactions between patients and providers, streamlining care [5]. Several countries found that the pandemic circumstances were motivators to embrace digital technology to mitigate the situation and provide care to patients [1, 5, 6]. To cope with the pandemic, workload increased for healthcare professionals, primarily for women [7–12].

Theory

Thought leadership encourages organisations to achieve competitive advantage by developing innovative working methods, encouraging collaboration within the workforce, sharing knowledge, engaging organisational values, understanding strengths and weaknesses, and working intuitively to adjust the institutional culture using active learning. It understands the individual while considering the organisational context.

Thought leadership is defined as “identifying, evaluating, and managing key topics and resources to achieve wise value-added results” [13, 14]. Thought leaders are revolutionaries challenging the status quo; their purpose is not only to accomplish operational goals but also to encourage innovative ideas, championing them from the outset until their achievement [13, 14].

In healthcare, thought leadership can shift organisational culture, develop new ways of working by innately feeling for opportunities, considering the best ideas and promoting them, acknowledging diversity of expertise and skill of the workforce and their organisational wisdom as key stakeholders, and handle challenges fluidly [14]. Thought leaders must embrace technology to influence stakeholders and engage their thinking potential, creativity, and innovation [14].

Women possess traits to embrace thought leadership principles, such as deep listening, emotional intelligence, effective communication, providing support, empathy, and maintaining work ethics [7, 15–22]. In healthcare, women health leaders (WHLs) bring compassion, sincerity, and empathy which have proven vital during the pandemic [2, 21, 23–25].

Women in Healthcare Leadership

Globally, women comprise approximately 70% of the health system workforce. However, only 25% hold senior leadership positions [7–9, 12, 26, 27]. Women demonstrated efficient management of the COVID-19 pandemic, leading global health policies and translating them into positive emergency response actions [12, 27]. In Germany, Chancellor Angela Merkel emphasised the importance of early testing [2, 27, 28]. President Tsai Ing-wen of Taiwan introduced 124 measures to prevent COVID-19 spread without resorting to lockdowns [2, 27, 28]. Prime Minister Jacinda Ardern implemented early lockdown and mandated self-isolation on people entering New Zealand [2, 27, 28]. In Norway, Prime Minister Erna Solberg used television to explain the pandemic to children and answer questions [2, 27, 28]. Iceland’s Prime Minister Katrín Jakobsdóttir offered free COVID-19 testing to citizens and became an example of proper control of COVID-19 [2, 27, 28].

These examples prove that women are essential for a sustainable health system during the pandemic [2, 10–28, 29]. These countries had fewer confirmed COVID-19 deaths and rapidly flattened COVID-19 curves [10–12, 27].

Women’s leadership is key to strengthening the health system; therefore, investing in and empowering qualified, trained, and experienced WHLs is necessary [7–9, 12, 29, 30]. Women’s unique leadership style is less individualistic, more interactive, and effective in building trust and achieving results [2, 7, 8, 15, 17, 22, 26, 31, 32]. Warmth, positive relationships at work, and compassion, which women innately demonstrate, have a significant impact on employee loyalty and are valued more highly than financial rewards [2, 16, 17, 22, 33].

Women in leadership endorse governance through groupthink, novel viewpoints, higher quality management, more effective risk management, and robust deliberation [7, 8, 10, 15–17, 22, 29, 30]. In 2019, Zenger and Folkman found that 84% of women were more effective in leadership competencies than men. Women excel in taking the initiative, acting with resilience, practicing self-development, driving for results, and showing high integrity and honesty [2, 15–17, 22, 34].

However, historically, there has been a discrimination against women’s access to leadership due to cultural and societal stereotypes and perceptions about traditionally male domains that emphasise masculine behaviours such as emotional restraint or rigid work processes, which create a challenging environment for women and affect their career progress [2, 7–12, 15–17, 22, 26, 35–39]. The proportion of women in the Saudi healthcare workforce is approximately 20% and increasing, yet women are underrepresented in leadership and executive roles [15–17, 23, 26, 37, 38, 40, 41]. The proportion of women working in executive or administrative positions in healthcare is unclear. At King Faisal Specialist Hospital and Research Centre (KFSHRC), at the time of this study, only six women held executive and deputy executive positions.

The G20 recommends women to participate in decision-making. Additionally, it suggests shifting towards digital technology to achieve global developmental targets [42]. The Kingdom of Saudi Arabia has announced and begun to implement significant strategic initiatives as part of the ambitious Vision 2030, such as the National Transformation Program, the Healthcare Transformation Program, and the Human Capability Development Program among several others [43–46]. These initiatives support a shift towards thought leadership, naturally moving the social dialogue towards a diverse work environment, and increased engagement of

women to lead and design innovative technological solutions and contribute significantly to managing health-care, especially in emergencies such as the COVID-19 pandemic [2, 5, 10–12, 41, 42].

During the pandemic, the rapid shift to virtual care required awareness of different levels by all stakeholders, recognition of specific performance patterns, need for champions, and active strategies to facilitate change [1, 40, 47–49]. Recent research has found that although women were mostly responsible for care, men dominated as leaders [2, 7, 8, 12]. Increasing WHLs is an opportunity to build resilience and responsiveness, especially during crises when organisational flexibility and responsiveness are critical to manage and sustain in the unforeseeable future [2, 10–12, 29]. Thought leadership by women may be an important asset to deftly handle the challenges of the pandemic and innovate to facilitate the shift to virtual care modalities.

Aim and Objectives

We explored thought leadership and its application during the crisis and highlighted qualities and leadership traits of WHLs to emphasise the potential for women to lead the transition to virtual care during the COVID-19 pandemic and beyond. We interviewed WHLs on their role in facilitating technological and practical changes in healthcare organisations to adapt to the pandemic situation and provided recommendations to lead change in healthcare services during crises.

Design

Study Setting

The KFSHRC is a tertiary healthcare organisation in Riyadh that offers specialised medical care and is a leading research centre in the Kingdom of Saudi Arabia. It highly specialises in oncology, organ transplantation, cardiovascular diseases, neurosciences, and genetic diseases. The KFSHRC has consistently achieved high ratings from national and international accrediting institutions such as the Joint Commission International (JCI), Magnet Recognition Program, American Nurses Credentialing Center (ANCC).

Sample

The study sample was identified through the KFSHRC human resources department. Snowball sampling was used to recruit female leaders and executives in the organisation, recommending other colleagues within the organization to connect with and interview until saturation was achieved,

having identified, and contacted all the females in managerial and executive positions within the hospital. We attempted to recruit participants from the highest level of executives to middle management. The initial estimate was that 15–20 interviews would be conducted during November–December 2020.

Inclusion Criteria

All female healthcare executives or administrators in leadership positions at the KFSHRC were eligible for inclusion in the study, including ward supervisors and nurse managers, regardless of their nationality, length of experience, and leadership role or position. We interviewed executives and their subordinates, which was beneficial as it reflected the reliability and validity of their self-reporting.

Methodology and Method

We used a phenomenological approach for a hospital-based qualitative research design with a standardised open-ended interview, adhering to the COREQ criteria and American Psychological Association guidance for replicability [50–52]. The interview duration was 10–20 min. Participants were invited by e-mail and could select a convenient time and medium for the interview (in person, by phone, or using a virtual meeting platform). The interview purpose was explained to them, information sheet and consent forms were provided, and the confidentiality terms were fully addressed. The interviews were recorded to facilitate data coding and analysis.

Instrument

The interview schedule was developed using Kerns [13] thought leadership profile and contained sections on participant demographics (age, work experience, administrative level, job role and responsibilities, and staff supervised). We utilized Kerns [13] measure with a Likert scale (always to never) for each of the thought leadership components: self and situational awareness, high-impact communication, decisive problem-solving, linking resources behaviour, openness to change, managing behavioural work style preferences, persuasiveness, managing conflict and negotiation, appreciating wisdom, and focussing on desirable outcomes. Questions were added to assess innovation by WHLs in their role during the pandemic response to COVID-19 circumstances, changes and adjustments made, and their awareness of their strengths and weaknesses. The interview schedule was piloted with several healthcare professionals to ensure coherence, flow, and suitability.

Table 1. WHL demographics

Variable	Frequency	%
Age		
28–36	6	38
37–45	3	19
46–54	4	25
55–63	3	19
Nationality		
Saudi	11	69
Non-Saudi	5	31
Administrative level		
Low	6	38
Middle	8	50
High	2	13
Work experience, years		
4–11	8	50
12–19	2	13
20–27	2	13
28–35	4	25
Total	16	

Data Analysis

Qualitative analysis, coding, organizing, sorting, and identification of leadership themes were performed manually, using colour coding techniques and cross-checking. Based on a sample of interviews, data were iteratively coded into themes and sub-themes. Data were compared across interviews and analysed through a framework to evolve beyond the thematic analysis and allow appreciation of unique cases, draw inferences, and ensure that the analysis was aligned with the research objectives using audio transcriptions of interview recordings. The analysis framework consisting of five phases was adopted from Heath et al. [53]: (1) familiarisation – interviews were familiarised by listening and reading the transcripts, notes were taken to recognise exceptional information; (2) identification – initial coding and identification of potential theme titles; themes were selected based on thought leadership traits (Kerns [13]); (3) indexing – going through the remaining interview transcripts and manually coding data; (4) charting – identifying sub-themes, commonality, and outliers based on the developed framework; and (5) mapping and interpretation – data are compared and analysed [49].

Results

Demographic Information

Sixteen WHLs participated in the study. Their age ranged from 28 to 36 years ($n = 6$, 38%), 46 to 54 years (25%), and 37 to 45 and 55 to 63 years ($n = 3$, 19%). Most

were Saudi ($n = 11$, 69%); 50% ($n = 8$) were mid-level administrators, while 38% ($n = 6$) and 13% ($n = 2$) were low- and high-level administrators, respectively. Regarding work experience, 50% ($n = 8$), 25% ($n = 4$), and 13% ($n = 2$) had 4–11, 28–35, and 12–19 and 20–27 years of work experience, respectively (Table 1).

Thought Leadership Profile

Self-Awareness and Situational Awareness

WHLs were aware of their strengths and weaknesses. Additionally, strengths were assessed from the interviews. Many responses reflected concerns that showing emotion is a weakness and attempts to control it. Situational awareness was assessed through seeking opportunities, targeting essential topics, and prioritisation. All WHLs were actively prioritizing, and 88% ($n = 14$) were focused on essential topics. Only 44% ($n = 7$) were actively seeking opportunities (Table 2).

High-Impact Communication

Communication and the ability to link skills were assessed. All participants showed openness to feedback. Among them, 94% ($n = 15$) could speak clearly, 81% ($n = 13$) ensured that their message was understood, and 75% ($n = 12$) felt they could link skills with individuals, 63% ($n = 10$) WHLs had an open-door policy (Table 2).

Decisive Problem-Solving

Participants were encouraged to share situations and evaluate the decisiveness of their problem-solving skills. Among them, 94% ($n = 15$) thought they solved problems in agreed-upon timeframes, were able to weigh time versus quality of information and achieved desired results; 69% ($n = 11$) and 31% ($n = 5$) rated themselves as good and excellent problem solvers, respectively. Among them, 75% ($n = 12$) felt capable of leading team decision-making (Table 2).

Linking Resources Behaviour

Linking resources behaviour had five elements: managing teamwork, ensuring alignment, managing key interfaces, and allocating resources efficiently and effectively. In a healthcare organisation, internal interfaces are between hospital employees, and external stakeholders are patients and the external supply chain. Among WHLs, 100% ($n = 16$) were internally managing key interfaces, 88% ($n = 14$) were managing teamwork and ensuring alignment, 69% ($n = 11$) were allocating resources efficiently and effectively, and 44% ($n = 7$) were managing external stakeholder interfaces (Table 2).

Table 2. Thought leadership in participants

Thought leadership component	Frequency	%
Situational awareness		
Seeking opportunities	7	44
Targeting essential topics	14	88
Prioritize what to be done	16	100
High-impact communication skills		
Speak clearly	15	94
Message is understood	13	81
Open to feedback	16	100
Linking skills with appropriate people	12	75
Open-door policy	10	63
Decisive problem-solving behaviour		
Good problem-solving skills	11	69
Excellent problem-solving skills	5	31
Problem-solving achieved within timeframes	15	94
Weighing time with quality of information	15	94
Desired outcome has been achieved	15	94
Referred to team decision-making	12	75
Linking resources behaviours		
Managing teamwork	14	88
Ensuring alignments	14	88
Allocating resources	11	69
Managing external stakeholder interfaces	7	44
Internally managing key interfaces	16	100
Support employee preferences		
Unconditionally support employees preferences	13	81
Conditionally support employees preferences	3	19
Persuasiveness assessment		
Leadership credibility	14	88
Offer a reasonable approach	9	56
Show emotion appropriately	14	88
Faced gender issues	3	19
Faced personality issues	2	13
Approach is set by the team	7	44
Ability to "sell" an idea	4	25
Assessing conflict management		
Proactively handling potential conflicts	5	31
Describing observable behaviour	7	44
Assessing the source of conflict	16	100
Delivering negotiating style	15	94
Determine what was learnt	2	13
Satisfaction with current team		
Satisfied with her team	7	44
Satisfied with her leader	8	50
Mentioned negative attitude	3	19

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Openness to Change

Leaders were asked about their openness to change. Among them, 81% ($n = 13$) and 19% ($n = 3$) rated themselves as "always" and "often" open to change, respectively. Our assessment showed 56% ($n = 9$), 38% ($n = 6$), and 6% ($n = 1$) to have moderate-, high-, and low-level of openness, respectively (Table 2).

Understanding and Managing Behavioural Work Style Preferences

All WHLs confirmed gaining awareness and learning through staff hospital meetings. They showed a high understanding of the importance of not forcing an employee to work in a task they are not suited for. In healthcare organisations, work preferences could be in data analytics,

leadership, teaching, handling patient cases, etc. All WHLs supported their employees to work where they might excel. Among them, 81% ($n = 13$) unconditionally supported their employee's work preferences, 13% ($n = 3$) supported with some criteria. For example, one WHL mentioned the challenge in assigning the responsibility of a complicated case or leadership position to junior staff as patient safety was a priority. Another explained that due to staff shortages, employees could request to switch departments only if they had a medical condition limiting them from performing tasks (Table 2).

Persuasiveness

Among the participants, 88% ($n = 14$) were confident in their credibility among stakeholders and confirmed their ability to show situation-appropriate emotion; this was corroborated from interviews with their subordinates. Nine WHLs (56%) were able to offer a reasonable approach. Four categories were identified: gender discrimination, personality issues, team approach, and the ability to "sell" an idea. Among the WHLs, 44% ($n = 7$) preferred to let their team set the approach, 25% ($n = 4$) were able to "sell" their ideas, 19% ($n = 3$) felt they would be approached differently if they were men, and 13% ($n = 2$) faced resistance from others due to personality issues (Table 2).

Managing and Negotiating Conflict

All WHLs were able to identify the source of conflict, 94% ($n = 15$) could deliver negotiating style, 44% ($n = 7$) could describe observable behaviour, 31% ($n = 5$) proactively handled potential conflicts, and 13% ($n = 2$) could define what was learned (Table 2).

Appreciating Wisdom

Among the WHLs, 63% had an open-door policy, 75% supported team decision-making, and 44% preferred their team set the approach. From the median of these indicators, we inferred that 60.5% were actively listening and offering advice, despite most not having the privilege to select their team members initially. We found that 50% ($n = 8$) and 44% ($n = 7$) were satisfied with their leaders and current team, respectively. Three WHLs (17%) indicated that they valued employee's positive attitude over experience and knowledge (Table 2).

Focussing on Desirable Outcomes

WHLs' administrative level, innovation during the pandemic and achievements were assessed from the interviews. Those in lower-administrative levels scored between 40 and 75% and those in mid- and high-administrative levels scored between 80 and 95% (Table 2).

Thought Leadership

WHLs' reflections on their leadership traits were evaluated against the thought leadership profile. Behavioural skills with one component were coded as (1) for yes or present and (0) if not mentioned or not present. For skills with more than one component, each component was coded similarly. The overall percentage skill existence was calculated by adding all components, dividing by their count, and finally, multiplying by 100 (Table 3).

Innovation

WHLs were either innovators or supported innovations during the pandemic. Several actions were initiated by them to minimise numbers of patients and visitors at the hospital. Patients were not allowed to visit the hospital and were offered access through telephone. Only critical patients were accepted in the inpatients wards, and medical teams were divided into teams A and B to lessen exposure and prevent transmission. Outpatient services shifted to virtual clinics for follow-up and medication dispensing. Patients were educated on the use of virtual platforms, utilising platforms that offered interactive therapy via video, audio, screen sharing, and a waiting room. The speech therapy department developed policies and procedures to ease patient flow and teach patients how to use a virtual setup. WHLs agreed that organising processes in this way was successful and most patients were satisfied with virtual care settings (Table 4).

Family medicine shifted to provide virtual prescriptions; depending on medication type, patients were able to obtain them from any pharmacy or via courier services. Prescriptions in paediatric haematology-oncology were different: medications were given through hospital outpatient pharmacy, but during the peak of COVID-19, restrictions on outpatient pharmacies did not allow to hand over medication. The issue was escalated, and a scheme was initiated to deliver medications directly to patients maintaining the recommended medication temperatures and distancing requirements.

As the hospital continued to perform procedures during lockdown, the blood bank faced severe shortages of blood and platelets. The department pivoted to send internal donor invitations and directed employees to use governmental application WATEEN (blood donation app) that enabled home visits to collect donations.

The risk management department had three members and struggled to complete at least five risk assessments weekly. The acting clinical disaster specialist designed a risk assessment crash course for employees from the clinics that were closed. Subsequently, 10 individuals were able to complete the hospital risk assessments.

Table 3. WHL thought leadership profile

Components	A1, %	A2, %	A3, %	A4, %	A5, %	A6, %	A7, %	A8, %	A9, %	A10, %	A11, %	A12, %	A13, %	A14, %	A15, %	A16, %
Self-awareness and situational awareness	67	67	67	100	67	33	100	100	67	67	67	100	100	67	67	100
High-impact communication	100	100	75	100	100	50	100	100	100	100	50	100	100	100	100	100
Decisive problem-solving	100	100	100	100	100	100	100	100	100	100	25	100	100	100	100	100
Linking resources	60	80	60	100	80	80	80	80	60	80	80	100	80	80	60	80
Understanding and managing behavioural work style preferences	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Openness to change	100	75	25	100	100	100	75	75	75	100	75	100	75	75	50	75
Persuasiveness	67	100	100	100	100	33	67	100	100	67	33	67	67	67	67	100
Managing and negotiating conflict	67	67	50	83	50	50	50	67	83	67	50	67	50	83	67	50
Appreciating wisdom	100	67	0	33	33	100	100	67	0	67	100	67	0	100	100	50
Focussing on desirable outcomes	70	85	80	75	70	40	80	80	80	55	80	80	80	70	80	95
Total score	83	84	66	89	80	69	85	87	77	80	66	88	75	84	79	85

Table 4. Innovation during COVID-19

Participants	Responses (quotes)
A3	"The hospital during COVID-19 had rapid changes. As an administrator, I supported the changes and the staff. I really just put a positive sort of spin on what was going on and try to support and hear their complaints."
A9	"We were covering the machines with plastic, and we were also trying to cover our transfuses with probe covers to prevent the virus transmission."
A11	"We had to do a team nursing, we had to do team A team B, so that we can lessen the exposure of the nurses in case that there was an exposure not the whole team will go down."
A14	"Of course, we applied all the regulations that the hospital and the Ministry of Health instructed us to do, we applied it immediately and also in order not to affect patient flow we converted our service to a virtual service immediately."
A15	"I did secretary work. I did whatever was needed to do because I wanted to keep people at home as much as I could."
A16	"We worked with them on that and facilitated with outreach to make sure that we are not just cancelling our patients even now after COVID, and we do backlog, for most of the areas we do not have a backlog because we serve them virtually, which is amazing."

A paediatric haematology-oncology working group met daily to follow-up patients, anticipate scenarios, and handle them proactively. The cardiology laboratories developed a staff guideline for standard and semi-invasive procedures to protect staff and patients from COVID-19 transmission, using international guidelines, evidence-

based practices on recommended personal protective equipment, room cleaning and disinfection, patient handling, and equipment cleaning after use.

The ICU collaborated with the residency department in assigning residents to support COVID-19 wards and arranging virtual teaching plans for medical students.

A safety culture program for hospital employees was developed. Non-essential workers and administrators shifted to telework, maintaining productivity, and organised weekly reporting of accomplished tasks. The productivity project initiative aimed to measure employees' productivity level by defining productive and non-productive time, calculated as a percentage, establishing a work standard in each department (Table 4).

Motivators

WHLs showed loyalty to the organisation, asserting that they did not see themselves working elsewhere. Their motivators were patients and their safety (25%, $n = 4$), career development (19%, $n = 3$), leaving a legacy even after moving on (13%, $n = 2$), and love for work and loyalty to the hospital (13%, $n = 2$). Five WHLs had unique motivations: supporting family, having a great team, previous negative experience with a manager inspiring to become a better leader for others, success of trainees, and new challenges or projects.

Organisational Role

Virtual KFSHRC before the Pandemic

WHLs confirmed that the hospital management had established virtual care prior to the COVID-19 pandemic, mostly used by the outpatient clinics to follow-up with patients in remote locations. The availability of the infrastructure enabled a quick shift to comply with mandated health restrictions during the crisis.

Hospital Meetings

The KFSHRC mandates leadership meetings with teams, to facilitate awareness of employee personal development plans, preferences, and strengths, and communication and idea sharing between team members. Huddle meetings (30 min in the morning) were held to exchange information or new memos. Staff meetings were held thrice a year for follow-up on set objectives and continued alignment with hospital goals. Council meetings were opportunities to highlight issues such as infrastructure or human resources to align all stakeholders.

Supply Chain

Mismanagement of supply chains distracts leadership focus from innovation and consideration of employee needs. The WHLs confirmed that they did not face equipment or personal protective equipment resource issues during the crisis as procurement and supply chain procedures were robustly managed by the hospital administration.

Organisational Culture

WHLs emphasised the organisations' highly supportive culture and their confidence to approach other departments with ideas. The strong relationships among the WHLs were also a valuable component of the culture within the organization. A7 was part of a pandemic WhatsApp group that included all leaders to share and support each other. A8 confirmed her phone number was accessible to everyone as per hospital policy, which was convenient for her. WHLs felt that their leaders were supportive and willing to help solve conflicts. WHLs acknowledged that as they were supported by their leaders, they in turn supported their employees. The organization is recognized for its strong organizational culture, diversity, and a sense of belonging; regardless of their nationality, the WHLs were enabled to innovate and achieve their goals in the health system and facilitate these successes.

Discussion

Our study explored thought leadership in practice during the pandemic, highlighting traits in WHLs that facilitated innovative technological changes, adaptation to work processes, and helped sustain the healthcare organisation.

Innovation

The pandemic forced organisations to work differently and allow working from home due to "lockdown" measures [2, 3, 5, 19]. Healthcare organisations which did not invest in telehealth or technological means for healthcare delivery earlier, quickly shifted to provide outpatient medical care [1, 5, 6]. These rapid adjustments required efficient leadership balanced with emotional intelligence [4, 19]. Interestingly, women leaders have stronger information technology skills compared to their male peers due to their motivation to learn independently and excel [2, 15, 19, 33]. Our findings echo that of others who found WHLs were innovators or supportive of hospital innovations during the pandemic, successfully shifting towards virtual mechanisms, including outpatient services, staff meetings, telework for non-front liners, prescriptions, inpatient visits, and student training, and developed virtual care policies and guidelines for ease of use [2, 4, 10, 12, 19].

Thought Leadership

Self-Awareness and Situational Awareness

The participants indicated a high level of self and situational awareness [13]. Our findings complement those of previously published research as all WHLs

showcased ability to analyse situations, showing flexibility and ability to prioritise efficiently [15, 18]. They demonstrated humility and appreciation of values and personalities of themselves and others and were highly capable of making timely and appropriate decisions while considering the impact of these decisions on others [15, 20, 26]. WHLs exhibited strong work ethics and spoke against unacceptable behaviour or practices using internal reporting channels which were essential qualities in enhancing the work environment and ensuring best patient care [31].

High-Impact Communication

Among the WHLs, 75% had high-impact communication skills, remaining visible and reachable during the crisis using virtual mechanisms and establishing new metrics to measure progress, which was essential [4, 15, 19, 20]. Their frequent communication was integral for crisis management, and positively impacted organisational performance, employee morale, and motivation levels [2, 48]. The participants manifested competencies such as active listening to influence team members, navigate change management, and ensure positive stakeholder engagement [25]. They were influential, highly able to communicate, building rapport and effective working relationships, and supporting employee morale during the crisis [15, 26, 30, 32, 49].

Decisive Problem-Solving

WHLs actively solved problems by gathering information, making decisions and delivering within expected timeframes [26, 34], and these behaviours were exhibited by both who were experienced and newly assigned: two WHLs newly assigned to the COVID-19 swabbing area showed efficient problem-solving skills. In recent literature, female managers frequently demonstrated deeper understanding of staff challenges within and outside the office, making them influential leaders and decision makers [25, 36, 37]. WHLs bring a unique approach to problem-solving, developing solutions, and addressing difficulties using their innate capabilities [15].

Linking Resources

WHLs have significant skills in linking resources, involving multidisciplinary stakeholders to solve issues [15, 26]. The WHO issued guidance to support COVID-19 health system response, which affirms the necessity for strong management to ensure smooth operations, efficient health workforce, and resource utilisation [10, 47]. WHLs encourage a positive environment through mutual respect and team spirit [31]. The participants efficiently

re-assigned staff to cover shortages in patient wards and emphasised strong communication to ensure issues were resolved quickly during the pandemic.

Understanding and Managing Behavioural Work Style Preferences

WHLs were supportive of employees' work preferences, mentoring and giving others the chance to shine, encouraging them to achieve maximum potential [25, 26]. They encouraged others to pursue their strengths in roles they excel in, registering in trainings and actively mentoring. In other studies, women's competencies and potential was discussed as inspirational role models, enhancing good human relations, investing in their teams, and encouraging skill development [15, 18, 21, 34]. The participants could establish trust and empowerment with employees, facilitating an environment with strong social bonds and support for growth [24].

Openness to Change

Among the participants, 56% showed moderate flexibility and tolerance to change compared with 38% with high levels of tolerance, constantly listening, analysing, implementing employees' suggestions, and evaluating potential outcomes. Kerns theory (2019) asserts that having at least moderate level of openness to change is essential to thought leadership; this is appropriate in healthcare [13]. Most of the participants encouraged brainstorming sessions to allow the team to share problem-solving [15, 24].

Persuasiveness

Leaders must be persuasive and inspire a shared vision [36, 48, 49]. In our study, 88% of WHLs had credibility among stakeholders. Those newly engaged in their managerial positions indicated that they were able to gain their colleagues' trust and were supported by their superiors. Other studies have considered showing emotions a negative leadership trait; our findings indicate that 88% of WHLs were able to express emotion in a situation-appropriate manner [15, 31, 49]. It is important for women leaders to be able to accept and express emotion appropriately and exhibit strength during crisis to support others and mirror employees as needed. Among the WHLs, 56% showed highly effective strategic thinking capabilities and were able to offer a reasonable approach to manage obstacles, similar to the findings of recently published literatures [15, 16, 24, 26].

Managing and Negotiating Conflict

All WHLs were able to negotiate and manage conflicts, including resolving disagreements. Individualised meetings were held and then all parties were asked to attend. Some WHLs preferred a neutral third party to intervene

in challenging conflicts. Others sought to proactively establish an employee orientation module on how to prevent and resolve work conflicts. This reflects the findings of other work which mentioned that women leaders built positive relationships and actively selected an appropriate approach to manage conflict [15, 16, 24].

Appreciating Wisdom

WHLs leveraged skills and expertise in listening to others and appreciating inputs in problem-solving. Most of them (75%) confirmed that decisions were made in teams, while 44% preferred their team set the approach or strategy to reach a goal, thereby fully engaging them and ensuring compliance [25]. WHLs valued others' opinions and organisational members' expertise to facilitate decision-making through consensus building [6, 15, 26]. They understood that leading in crises requires wisdom and patience. Our WHLs were effective decision makers, engaged employees in discussions about managing crises and prepared implementation plans [49].

Focussing on Desirable Outcomes

Effective leadership articulates common goals instead of focussing on the vision of a single person and encourages achievement of desired outcomes [49]. WHLs in our study engaged all stakeholders and shared these directions successfully.

Thought Leadership

Thought leadership profile components such as self-awareness, high-impact communication, involving others in decision-making, being goal-oriented, innovation, understanding technology, the ability to improve, and opportunity seeking are effective in crisis management [14, 19, 48]. In our study, WHLs' scored between 66 and 89% in thought leadership. This demonstrates that they had the required traits to manage healthcare organisations through the COVID-19 crisis effectively [11, 12, 39].

Motivators

WHLs were guided by a personal compass, focussing on ideas and experiences that motivated them. Their compassion, giving, and self-motivated personality enabled them to lead. They were passionate about their work, motivated by supporting their families, their teams, the desire to be a good manager, or ensuring patient safety [7, 15, 17, 25].

Organisational Role

The hospital's technological infrastructure and virtual modalities were present before the COVID-19 pandemic [4]. This eased WHLs ability to shift to fully virtual modes for

daily work activities. The majority of WHLs affirmed support by their superiors, peers, and employees and by those in other departments, exhibiting a strong positive hospital culture that enabled them to succeed in their roles and increase their potential to expand vertically into executive positions [24]. This positively indicates the mindset shift that should be encouraged further [1, 12, 16, 17, 37, 38, 40].

Strengths and Limitations

This study was unique in exploring women's leadership potential in healthcare during the COVID-19 crisis in Saudi Arabia. The leadership initiatives by women can be modelled in other healthcare organisations. The hospital administration supported this study, and the WHLs were willing to showcase their abilities and skills in leadership to improve the quality of healthcare services in their organisation. The study sample size provided an in-depth understanding of the WHLs' experiences in hospital management during the COVID-19 crisis, and the interview method facilitated the exploration of their potential for thought leadership.

A limitation of this study was the challenge to secure participants and conduct the lengthy interviews due to the overwhelming workload during the pandemic. Some participants were cautious in expressing vulnerability or ideas outside the box due to concerns about visibility and potential identification in the organisation as they are considerably few and how that might affect the positions they have worked hard to achieve. Additionally, it was difficult to identify definitive statistics on women leaders who held leadership positions in the health sector in Saudi Arabia as this data is not readily available or accessible through governmental websites or national statistics portals.

Policy and Practice Implications

It is recommended that organisations consider offering experience, knowledge, and support to women by their peers in building their potential to be innovative healthcare leaders considering the ongoing digital transformation. In this study, WHLs exhibited thought leadership profiles that granted them the opportunity to innovate and manage through crises and they excelled and thrived in their roles [14]. It is recommended to establish a women's healthcare leadership program, increase prioritisation on hiring women in executive positions in the Saudi health sector, and utilisation of their untapped potential [16, 17, 22, 26, 37, 38, 40]. Women's thought leadership capabilities will enhance the efforts towards a more sustainable and robust health system for the Kingdom of Saudi Arabia in line with the strategy for Vision 2030, the recommendations of the World Health Organization and the G20 [10–12, 42, 43].

It is also recommended to evaluate the preparedness and infrastructure of healthcare organisations to expand virtual care services and enhance women's innovation potential to drive organisational performance. Furthermore, it is recommended that further research be conducted on women's leadership capacity and administrative skills, and their impact on highest quality healthcare for patients.

Conclusion

The study provided evidence on WHLs' capabilities to lead a healthcare organisation through crisis and beyond. Technological innovation is an increasingly viable means to sustain healthcare systems. This shift requires leadership criteria that considers stakeholders and involves them in decision-making and setting approaches towards directed goals. Women are thought leaders who combine competencies and other innate traits and intrinsic motivation of self and others, considering work preferences and pursuit of innovations to achieve organisational goals. Women's leadership potential in healthcare should be recognised and utilised in building the capacity of the healthcare workforce and achievement of ambitious healthcare reforms.

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Statement of Ethics

This research study was conducted in accordance with ethical guidelines of the World Medical Association Declaration of Helsinki and has been approved by the Research Advisory Council of the King Faisal Specialist Hospital and Research Centre

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(KFSHRC) Ethics Review Committee and the National Committee of Bioethics (NCBE) of the King Abdulaziz City for Science and Technology (KACST) No: 10023639. Participants were provided complete study information and asked to sign a consent form to participate in the interview recording and publication of study findings. Participants received principal investigator contact details (AG) and were given the opportunity to withdraw from the study at any time.

Conflict of Interest Statement

The authors declare no conflict of interest in the conduct or publication of this research study. The authors declare they have no competing interests in this research work.

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Author Contributions

A.G. and H.Z. conceived the concept, designed the research project, and prepared all necessary documentation. A.G. was responsible for the execution and acquisition of data, analysis, interpretation, and initial manuscript drafts. H.Z. supported the execution, analysis, interpretation of data, writing, critical review, and substantial revisions of the manuscript.

Data Availability Statement

The study was designed to protect and secure personal identifying details of participants, ensuring they were always kept strictly confidential. Data were coded and anonymized, known only to the principal investigator (A.G.) and kept securely on a dedicated computer, not shared or transmitted elsewhere. All recordings and transcripts will be destroyed once the research project is complete as per standard research ethics regulations. Data supporting research results can be obtained by contacting the principal investigator (A.G.), exclusive of personal identifying information of participants.

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