

Exploring the transformational leadership capacities of nurse supervisors in Saudi Arabia



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ABSTRACT

The COVID-19 pandemic posed a major challenge for healthcare systems worldwide. This study examined how hospital nurse supervisors in Saudi Arabia applied transformational leadership (TL) skills during the pandemic, as perceived by staff nurses. It also identified effective strategies and challenges nurse supervisors encountered during crises. Conducted across hospitals in Saudi Arabia, this quantitative cross-sectional study included 916 staff nurses. Data was collected from January to April 2023 through a 19-item survey questionnaire on TL. The six aspects of TL (Charisma, Social, Vision, Transactional, Delegation, and Execution) were consistently observed among nurse supervisors, with an average score of 2.99 ± 1.014 . All paired domains, except Charisma, showed strong positive correlations, indicating solid relationships within each pair. Identified best practices of nurse supervisors included shared goals, supervision, mentorship, and incentives. However, challenges included a sudden increase in patient numbers, limited resources, and nurses' concerns about health and safety. These findings can guide policymakers in developing leadership programs to strengthen nurses' leadership skills, particularly in crisis situations.

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1. Introduction

Nurses encounter significant challenges during public health crises, such as the global COVID-19 pandemic, that exceed expectations. The pandemic has created difficulties not only for COVID-19 patients and their families but also for the global healthcare system as a whole. Healthcare professionals, especially those in leadership roles, have faced immense pressure and extraordinary demands (Aquila et al., 2020).

Nurses are often seen as "functional doers," carrying out tasks independently, sometimes without proper communication. However, effective leadership skills are essential for nurses to make informed decisions (D'Auria and De Smet, 2020). Leadership becomes especially critical during crises, which are often characterized by unfamiliarity and

uncertainty. In nursing, leadership involves creating a shared vision, motivating staff, and empowering them to work towards improving patient outcomes. The choice of leadership style and strategy significantly affects the success of projects and work-related tasks. A suitable leadership style helps nurse supervisors allocate responsibilities effectively and structure organizational hierarchies. Research indicates that Transformational Leadership (TL) is particularly effective during crises, as it addresses the challenges with ease (Pursio et al., 2021). Moreover, TL has a strong positive impact on nursing job satisfaction. Transformational leaders inspire and motivate, enabling them to positively influence individuals within organizations (Alzahrani and Hasan, 2019).

A crisis is often considered a "double-edged sword," presenting both challenges and opportunities for effective leadership and motivating team members to follow predefined response plans. TL skills inspire employees to take ownership of their roles and exceed expectations. Leaders with these competencies are adept at finding innovative ways to achieve goals and resolving conflicts effectively. Research indicates that applying TL during a crisis can elevate nursing teams to higher

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levels of practice, reduce patient care errors, and enhance staff satisfaction (Asif et al., 2019).

Transformational leaders recognize the need for change, create an inspiring vision, and engage their teams to achieve that vision. This vision serves as a foundation for defining strategies, organizing workflows, and implementing actions. During crises, transformational leaders excel at reallocating resources and redistributing human capital to reduce chaos and maintain order. They assess the broader situation comprehensively and take prompt, decisive action. Furthermore, these leaders encourage team members to "think outside the box," challenge them to solve problems creatively, and motivate innovative thinking to develop unique and effective solutions (Al-Mansoori and Koc, 2019).

Moreover, TL serves as a transformative framework within crises, capable of questioning existing norms and guiding nursing teams toward enhanced achievements and cohesion. Consequently, promoting the adoption of TL becomes imperative to yield significant improvements in organizational performance across various tiers. With this, the application and observance of the six domains of TL among nurse supervisors of Saudi Arabia are explored in this study, as perceived by staff nurses. Furthermore, this study outlines the best practices and challenges confronted by nurse managers in the midst of a crisis.

2. Methods

This quantitative cross-sectional study examined the practice of TL among nurse supervisors in Saudi Arabia during a public health crisis, as perceived by staff nurses. Using a convenience sampling method, the study included staff nurses from various hospitals across Saudi Arabia. Participation was not limited by nationality; however, eligibility required a minimum of one year of service at their respective hospitals and active involvement during a public health crisis. Data collection involved a standardized questionnaire for staff nurses, while nurse supervisors provided additional insights through interviews. A total of 916 participants completed the survey via Google Forms.

The research initiation involved an online survey facilitated by a Google Form. The link to the survey was distributed to staff nurses via the hospital's Continuing Nurse Education (CNE) Unit. The link encompassed an invitation to voluntarily participate in the study. The informed consent covered details about the nature of the study, its objectives, and the participants' involvement, as well as voluntary participation. Additionally, guidelines were furnished on how to complete the survey questionnaire. Data collection occurred between January to April 2023. To evaluate the extent to which nurse supervisors practiced TL during a public health crisis, a 19-item survey questionnaire based on a 4-point Likert scale was used. The questionnaire, adapted from the standardized MLQ 5x, covered six domains: Charisma, Social, Vision,

Transactional, Delegation, and Execution. Each domain included three statements, except for Execution, which had four statements. Mean scores were interpreted as follows: 1.0–1.54 (rarely evident), 1.55–2.54 (occasionally evident), 2.55–3.54 (frequently evident), and 3.55–4.0 (highly evident). Additionally, interviews with nurse supervisors were conducted via the Zoom platform to provide insights and validate the survey findings. Data analysis was performed using SPSS Version 26. Mean and standard deviation were calculated to assess variation from the average. The correlation among TL domains was analyzed using Spearman's rho rather than Pearson's r , as the assumption of normality was violated.

3. Results

Table 1 illustrates the demographic breakdown of respondents, revealing that a significant majority (86%) were female, in contrast to their male counterparts. Notably, a substantial proportion of participating nurses were affiliated with the Northern Borders region (42%) and were employed in government hospitals (99%). Furthermore, a considerable portion of nurses possessed a baccalaureate degree (73.1%), while 26.4% held a nursing diploma (2-year course), and a smaller fraction (0.4%) had attained a doctorate degree. In terms of years of service, a noteworthy segment of participants (41.5%) had served for 5-10 years, while 40.3% had less than 5 years of experience.

Table 2 shows that staff nurses frequently observed their nurse supervisors to exhibit Charisma, as evidenced by the following mean scores and SD of 2.84 ± 1.011 , 3.06 ± 0.893 , and 3.09 ± 0.932 , respectively. This may further indicate that the staff nurses show trust and respect to their nurse supervisors by exhibiting true dedication to their work. Table 3 shows that the staff nurses frequently observed the Social domain from their nurse supervisors, as seen from the average mean scores and SD of 2.98 ± 0.960 , 2.99 ± 0.968 , and 3.13 ± 0.931 , respectively. This may further indicate that nurse supervisors frequently assist subordinates in reaching their full potential through mentoring and providing a positive environment. Table 4 presents a clear depiction wherein nurse supervisors are consistently (frequently) observed engaging in activities such as articulating the vision and cultivating a sense of ownership among their staff nurses, as evidenced by mean scores of 2.87 ± 0.995 , 3.02 ± 0.941 , and 2.95 ± 0.948 . Table 5 similarly presents nurse supervisors who are perceived to consistently (frequently) stimulate the intellectual capacities of nurses and focus on the day-to-day activities of the group. Nurse supervisors typically give rewards to staff nurses for meeting specific goals or performance standards, as evidenced by the average mean score of 2.94 ± 0.999 . Table 6 provides a clear portrayal of the prevalent inclination (frequently observed) of nurse supervisors toward delegation, substantiated by the average mean

scores and standard deviations: 2.60 ± 0.1019 , 3.04 ± 0.948 , and 3.10 ± 0.887 . Nurse supervisors are perceived to entrust tasks to their subordinates, accompanied by specified outcomes.

Table 1: Demographic profile

Demographics	Frequency	Percentage
Age		
21 – 30 years old	219	23.9
31 – 40 years old	462	50.4
41 – 50 years old	193	21.1
51 – 60 years old	43	4.7
Gender		
Male	129	14.1
Female	788	86
Civil status		
Single	336	36.7
Married	570	62.2
Others	10	1.10
Education		
Diploma in nursing	242	26.4
B.Sc.	670	73.1
Masters degree	0	0
Doctorate degree	4	0.4
Region		
Qassim	77	8.4
Riyadh	69	7.50
Makkah	96	10.4
Madinah	107	11.7
Northern borders	385	42.0
Aljouf	31	3.38
Hail	151	16.4
Hospital		
Government	908	99.1
Private	8	0.90
Years of service		
Less than 5 years	369	40.3
5-10 years	380	41.5
11-125 years	119	13.0
16-20 years	40	4.40
More than 20 years	20	2.20

It can be seen from [Table 7](#) that the domain Execution is perceived to be frequently evident, as evidenced by the following mean scores: 3.29 ± 0.854 , 2.96 ± 0.945 , 3.20 ± 0.881 , and 2.81 ± 0.950 . Nurse supervisors are equipped with ingenuity and expertise and guide their subordinates into implementing the plans. The staff nurses

consistently recognize the nurse supervisors' demonstration of the six domains of TL. Each domain achieves a mean score of approximately 3.0, indicating frequent observance. However, the standard deviations are notably large, suggesting variability in perceptions. While many staff nurses observe these domains frequently, some perceive them as being applied only occasionally or not at all. Spearman's rho was used instead of Pearson's r to evaluate the relationships among the six domains of TL due to a violation of the normality assumption.

As shown in [Table 8](#), the results indicate that, except for the Charisma domain paired with Social, Vision, Transactional, Delegation, and Execution, the remaining domain pairs show strong positive correlations. These strong correlations indicate robust associations. For example, the Social and Vision domains exhibit a significant positive relationship, meaning that an increase in the level of the Social domain often coincides with a rise in the level of the Vision domain. Similarly, other strongly correlated pairs suggest comparable patterns, as indicated by their respective correlation coefficients.

4. Discussion

4.1. Charisma

Charismatic leadership is a crucial skill for nursing practitioners, especially during periods of upheaval and transition, as it positively influences their teams. Nurse supervisors with charismatic leadership display genuine commitment, foster trust, and show respect for their nursing teams. Such leaders not only inspire and guide but also focus on supporting the personal and professional growth of their team members through shared goals. This leadership style promotes greater efficiency, improved team morale, and stronger resilience ([Moura et al., 2019](#)).

Table 2: Charisma as a TL domain

Statement items	Mean	SD	Remarks
My nurse supervisor makes a deliberate effort to ensure I feel comfortable in their presence	2.84	1.011	Frequently evident
They have established a broad network of individuals who trust and depend on them	3.06	0.893	Frequently evident
I respect and follow my nurse supervisor due to their expertise and skills, not out of fear	3.09	0.932	Frequently evident
Total number of respondents: 916	2.99	0.919	Frequently evident

SD: Standard deviation

Table 3: Social as a TL domain

Statement items	Mean	SD	Remarks
My nurse supervisor supports my self-development	2.98	0.960	Frequently evident
They provide challenges to encourage my growth	2.99	0.968	Frequently evident
My nurse supervisor is readily available when needed	3.13	0.931	Frequently evident
Total number of respondents: 916	3.03	0.954	Frequently evident

Table 4: Vision as a TL domain

Items	Mean	SD	Interpretation
My nurse supervisor helps me understand their vision by using images, stories, and models	2.87	0.995	Frequently evident
They use simple words, visuals, and symbols to clarify what needs to be done	3.02	0.941	Frequently evident
My nurse supervisor assists me in finding new approaches to handle complex tasks	2.95	0.948	Frequently evident
Total number of respondents: 916	2.95	1.10	Frequently evident

4.2. Social

The Social aspect entails the nurse supervisors' role in facilitating learning through coaching and

mentoring while also fostering a demanding environment to propel nurses toward their full capabilities. In times of challenges, such as a public health crisis, nurse supervisors offer empathy and

guidance to junior colleagues. Social managers manifest the attributes of individualized consideration by personally coaching and instructing their followers, thereby fostering their personal growth. They treat staff nurses as unique individuals, not merely as part of a collective group, recognizing

distinct needs, competencies, and aspirations. Nurse supervisors with TL skills integrate individualized consideration and exhibit social qualities, actively listen to the concerns of others, and aid in cultivating their strengths (Al-Mansoori and Koc, 2019).

Table 5: Transactional as a TL domain

Items	Mean	SD	Interpretation
My nurse supervisor acknowledges and rewards me when I accomplish challenging tasks	2.63	1.06	Frequently evident
They establish standards that are mutually agreed upon by the team	3.07	0.948	Frequently evident
My nurse supervisor ensures that poor performance is addressed and corrected	3.14	0.908	Frequently evident
Total number of respondents: 916	2.94	0.999	Frequently evident

Table 6: Delegation as a TL domain

Statement items	Mean	SD	Remarks
My nurse supervisor allows me the flexibility to work in my preferred manner	2.60	1.019	Frequently evident
They provide direction and guidance to help me achieve my goals	3.04	0.948	Frequently evident
My nurse supervisor is content as long as tasks are progressing smoothly	3.10	0.887	Frequently evident
Total number of respondents: 916	2.91	0.978	Frequently evident

Table 7: Execution as a TL domain

Statement items	Mean	SD	Remarks
My nurse supervisor ensures that tasks are completed effectively	3.29	0.854	Frequently evident
They provide coaching and feedback to help me understand my performance	2.96	0.945	Frequently evident
My nurse supervisor monitors tasks to ensure goals are achieved	3.20	0.881	Frequently evident
My nurse supervisor lets me rethink ideas that are never questioned before	2.81	0.950	Frequently evident
Total number of respondents: 916	3.07	1.018	Frequently evident

Table 8: Correlation of the six domains of TL

		Charisma	Social	Vision	Transactional	Delegation	Execution	
Spearman's rho	Charisma	Correlation coefficient	1.000	-.013	-.024	-.014	.007	.014
		Sig. (2-tailed)	-	.695	.471	.662	.823	.678
	Social	Correlation coefficient	-.013	1.000	.867**	.843**	.819**	.849**
		Sig. (2-tailed)	.695	-	.000	.000	.000	.000
	Vision	Correlation coefficient	-.024	.867**	1.000	.849**	.819**	.836**
		Sig. (2-tailed)	.471	.000	-	.000	.000	.000
	Transactional	Correlation coefficient	-.014	.843**	.849**	1.000	.834**	.863**
		Sig. (2-tailed)	.662	.000	.000	-	.000	.000
	Delegation	Correlation coefficient	.007	.819**	.819**	.834**	1.000	.832**
		Sig. (2-tailed)	.823	.000	.000	.000	-	.000
	Execution	Correlation coefficient	.014	.849**	.836**	.863**	.832**	1.000
		Sig. (2-tailed)	.678	.000	.000	.000	.000	-

** : Correlation is significant at the 0.01 level (2-tailed)

4.3. Vision

Furthermore, transformational nursing supervisors formulate a lucid Vision, which they communicate to their subordinates and inspire them to embrace the organization's collective vision (Al-Mansoori and Koc, 2019). According to Howard Catton, President of the International Council of Nurses (ICN), amidst a crisis, individuals might become engrossed in intricate details, necessitating the leader's proficiency in comprehending crucial elements and conveying the overarching perspective to the team (Ford, 2020). Correspondingly, the team's motivation toward realizing the vision should derive not from fear but from the exemplary conduct exhibited by the managers. Additionally, scholarly works underscore that the differentiating factor lies in the transformational leader's capacity to stimulate inventive concepts to emerge from their teams.

The establishment of a collective vision stands as a pivotal element in fostering positive growth within

the organization (hospital) and is closely associated with factors that impact the assimilation and utilization of knowledge. Nurse supervisors with TL skills establish benchmarks and anticipations, personally exemplifying them for team members, thereby fostering a profound sense of purpose and cultivating a "mission mindset" to attain objectives.

4.4. Transactional

The transactional leadership domain focuses on recognition, rewards, and consequences based on employee performance. It involves corrective actions to address performance issues and aims to establish a sequence of actions that align with the immediate goals of both the leader and their team. This leadership style is characterized by structure, self-interest, and control over subordinates. While nurse supervisors may support a certain degree of risk-taking within the team, they also ensure that poor performance does not negatively impact team

morale (Specchia et al., 2021). Additionally, nurse supervisors encourage innovation, creativity, and the exploration of new opportunities without fear.

4.5. Delegation

Another TL domain is Delegation, which involves entrusting tasks to subordinates. Nurse supervisors grant staff nurses the empowerment to act on their behalf while acknowledging that delegation comes hand in hand with responsibility and the obligation to be accountable for those actions. Similarly, delegation not only empowers the team but also fosters trust among its members. Furthermore, a core objective of delegation is to facilitate the professional growth of team members. These nurse supervisors contribute to cultivating a novel atmosphere within the team, thereby fostering a sense of responsibility, appreciation, and motivation. Despite the common discomfort and reluctance many managers experience due to the potential loss of organizational influence and status tied to delegation, this study's respondents held a contrary perspective.

4.6. Execution

Execution, as an aspect within the realm of TL, characterizes a nurse supervisor who actively accomplishes the organization's objectives. This leader effectively delegates and oversees the tasks and responsibilities assigned to subordinates. Execution denotes the proficiency to attain personal goals and objectives, which in turn fosters enhanced involvement and contentment among team members. Nurse supervisors stand as noteworthy pillars within hospitals, consistently motivating team members to strive for the realization of organizational aims. This practice contributes to bolstering team members' commitment and sense of autonomy (Lamb et al., 2018).

By and large, there is an abundance of literature highlighting the potency of TL abilities during crisis scenarios, particularly in the context of disasters and diverse public health emergencies; however, these have yet to be fully juxtaposed against the unique crisis induced by the COVID-19 pandemic. Moreover, this study acknowledges the proposition that coupling TL aptitudes with emotional regulation stands as a pivotal element in crisis situations (Santoso et al., 2022). Within the intricate realm of healthcare establishments, despite the challenges posed by public health crises, such as the mounting economic and social pressures impacting the quality and safety of patient care, significant potential for service enhancement remains. TL proficiencies equip nurses with optimal skills to contribute to quality patient care delivery while simultaneously enriching job satisfaction (Alzahrani and Hasan, 2019). The findings of this study showed similarities with other studies in that clinical nurse supervisors were statistically proven to be transformational leaders (Alharbi et al., 2021).

In crisis situations, nurse supervisors serve as key sources of guidance, motivation, and inspiration for staff nurses. Their role involves preventing the breakdown of the team, as such disintegration could weaken the structure and lead to self-serving behaviors among staff. Transformational leaders possess the ability to counteract group fragmentation, promote positive behavior, minimize the negative effects of the crisis, and maintain both structure and team cohesion. While research highlights a strong relationship between intelligence and leadership, it also emphasizes that this connection is context-dependent. TL competencies in nursing have a significant potential to directly impact staff and patient safety, ultimately influencing patient outcomes. Therefore, it is essential to adequately prepare nursing supervisors to manage crises effectively.

4.7. Best practices and challenges

The interviews among nurse supervisors were conducted to ascertain and delve into the optimal strategies and difficulties encountered within a crisis context. These strategies are perceived as highly efficacious in handling public health emergencies. The identification of these effective strategies resulted from a series of virtual interviews. Conversely, the challenges encompass the encountered obstacles that have impeded crisis management efforts. The interviews were conducted to provide context and depth to the findings obtained from the surveys.

From the various interviews conducted, a consistent pattern emerged, revealing a shared approach among nurse supervisors in effectively communicating the immediate goals of hospitals during crisis situations. In most hospitals, nurse supervisors, in conjunction with hospital administrators, collectively communicate the hospital's objectives, encompassing all necessary directives to address the specific crisis at hand. These directives are promptly disseminated throughout the hospital via the institution's intranet, email distribution to all staff members, and physical postings on bulletin boards to ensure daily reinforcement. To facilitate ongoing evaluation and prompt response to pressing matters, the Nurse Director or Chief Nurse convenes regular concise meetings, both virtually and in person, with team managers. Nurse supervisors emphasized that this practice fosters a sense of shared purpose among all nursing team members, augmenting a sense of cohesion and collaboration. As a result, this approach has demonstrated its efficacy in expediting communication and decision-making, even in the midst of crisis situations (Rosen et al., 2018).

Supervisory skills encompass a combination of offering less oversight to proficient nurses while providing more intensive guidance to mentor those who are new to the profession or novice nurses. This approach is guided by the principle of managerial rounds conducted at regular intervals. To uplift the

morale of nurses experiencing low spirits during the pandemic, specific initiatives are undertaken. Task assignments are tailored to align with the specialized skills and experience of individual nurses. The process involves empowering subordinates to foster leadership and managerial qualities by allowing them to plan, make decisions, and provide precise reports. A nurse supervisor underscored the significance of adept feedback delivery and coaching as essential skills for effective management.

A considerable proportion of respondents expressed that implementing rewards and recognition mechanisms, such as time-off incentives and supplementary hours added to their vacation duration, serves as a means to motivate and inspire nurses. Nurse supervisors recognize the toll that prolonged crises like the pandemic have exacted on the nursing staff; hence, endeavors are undertaken to infuse moments of humor during leisure time. This strategy aims to uplift the team's morale, alleviate tension, and mitigate the accumulation of stress-induced toxins resulting from prolonged strain. Numerous studies underscore the significance of comprehensive management approaches and compensation strategies as crucial means to bolster motivation, retention, and the overall performance enhancement of nursing professionals (Daniels et al., 2019).

Moreover, it is noteworthy to highlight the unanimous perspective shared by nurse supervisors concerning the vital role of TL skills amidst a crisis. In this context, nurse supervisors posit that adopting an authoritarian stance during a crisis is unappealing. Instead, they firmly believe that demonstrating compassion and reducing demands on the staff nurses are more likely to yield favorable outcomes. In the midst of crises, especially public health emergencies characterized by heightened emotions, nurses are often overwhelmed by fear, making errors more probable. During the pandemic, nurse supervisors, however, maintained patience and opted for a charismatic approach, persistently motivating their subordinates toward collaborative efforts in tackling the situation. Despite the commendable attitude displayed during crises, nurses grapple with their own set of challenges, particularly evident during the initial phase of the COVID-19 pandemic. The healthcare system encountered resource shortages, both in terms of human resources and materials, while the fear of contracting the virus loomed large (Akkus et al., 2022).

A human resource study revealed that a mere one out of every three healthcare professionals is an actual Saudi citizen. The Kingdom of Saudi Arabia is mandated to fill a substantial number of nursing vacancies, amounting to no less than one hundred thousand positions, by the year 2030 (Al-Hanawi et al., 2019). Hence, healthcare institutions in Saudi Arabia exhibit a highly varied workforce, encompassing nurses hailing from a range of nations such as the Philippines, India, and Arab countries, including Yemen, Tunisia, Jordan, and Egypt, among

others. The diverse composition of the workforce posed a challenge during the crisis, as experienced by both nurse managers and staff nurses. The language barrier was identified as exacerbating the crisis, leading to misunderstandings and communication breakdowns. However, this challenge has been addressed by consistently emphasizing the use of plain and straightforward language to ensure clear understanding. Additionally, having a designated member capable of reliable translation has proven effective. Visual methods of communication, such as diagrams to elucidate complex protocols, have been employed. Most importantly, maintaining respect and patience amidst stressful circumstances has been underscored as crucial.

Nurse supervisors likewise recognize the substantial rise in workloads due to the increased patient numbers, leading to an imbalanced nurse-patient ratio. This imbalance triggered conflicts arising from perceptions of inequitable task assignments, subsequently causing some staff to be reluctant to collaborate with others and, in some cases, leading to resignations. This scenario has been echoed by a study illustrating Saudi Arabia's response to a shortage of nurses by hiring expatriate nurses. However, this decision has introduced new challenges, including issues related not only to language competency in both English and Arabic but also the strain from an inadequate nurse-patient ratio. These challenges have amplified nurse dissatisfaction, consequently contributing to heightened turnover rates among nurses (Alsadaan et al., 2021).

Nonetheless, nurse supervisors regarded these challenges as a chance to enhance the bonds among the nursing team. Endeavors were undertaken to tackle conflicts by attentively considering the staff's viewpoints and implementing feedback rooted in metrics rather than relying solely on managerial perspectives. This approach was perceived as efficacious in rectifying misconceptions of inequity.

Furthermore, a notable portion of nurse supervisors recognize that the brunt of the work in response to a crisis does not rest solely on supervisors; it necessitates a collaborative endeavor. Consequently, challenges were approached by actively soliciting suggestions from the staff nurses. Certain supervisors elucidated that numerous nurses in Saudi Arabia possess extensive crisis management experience, drawing from their involvement during the SARS-CoV and MERS-CoV outbreaks. This past experience in crisis management is met with optimism, as nurses display heightened resolve and determination despite the prevailing uncertainties.

It can be said that TL was able to foster a more positive and supportive work culture among nurses. This mediated the effect of leadership on improving job satisfaction and job performance among nurses. Likewise, TL helped mitigate the risks and negative impacts of the pandemic on the nursing staff (Boamah, 2022). Transformational leaders were able to uplift the nurses' well-being through a crisis by

enabling nurses to work effectively and providing encouragement, helping improve nurses' psychological, social, and physical well-being during the challenging conditions of the pandemic (Farid et al., 2021).

Despite the stresses brought by public health crises, nurse supervisors were still perceived by staff as primarily exhibiting TL characteristics like being informational, motivating, and able to advance the organization. Maintaining these positive leadership traits was important for supporting the nursing workforce during a public health crisis (Harrington, 2021).

More importantly, TL played a vital role in creating a positive work environment, enhancing psychological well-being, improving communication, and maintaining supportive behaviors that helped nurses cope with the immense challenges of public health crises. Effective leadership is truly essential in protecting nurses' emotional well-being, too.

5. Conclusion

The results of this study revealed that nurse supervisors in various hospitals across Saudi Arabia frequently demonstrated all six domains of TL: Charisma, Social, Vision, Transactional, Delegation, and Execution, particularly during the COVID-19 pandemic. Additionally, the findings indicated a strong positive correlation among these domains, emphasizing their interconnected nature. While the study does not diminish the importance of other leadership skills, it highlights that TL competencies played a pivotal role in effectively managing the COVID-19 pandemic as a health crisis and achieving positive outcomes among Saudi Arabian nurses. Therefore, it is crucial for hospital administrators to regularly evaluate the leadership performance of nurse supervisors and implement necessary improvements. At the same time, nurse supervisors should have access to leadership development programs to enhance their skills for more effective performance. These findings also provide valuable insights for policymakers in designing leadership programs that focus on strengthening leadership and management skills, especially in crisis scenarios.

5.1. Limitations

This study has several limitations. First, the use of convenience sampling may not accurately represent the target population, limiting the generalizability of the findings to the broader population. Additionally, the study could have included focus group discussions (FGDs) among nurses and observational methods to gain a more detailed understanding of the application of TL skills. The reliance on self-reported data introduces potential biases, such as social desirability bias or recall bias, which may affect the accuracy of participants' responses. These biases can influence how participants perceive and report their experiences, particularly in sensitive contexts. To reduce these biases, the study ensured

participant anonymity and emphasized the importance of honest responses. Clear instructions were also provided to help participants better understand the survey questions.

For future research, the inclusion of mixed methods, such as qualitative interviews, is recommended to complement quantitative data and offer a more comprehensive understanding of participants' experiences. Employing stratified random sampling could also enhance the representativeness of the sample by ensuring a better representation of different subgroups within the population, which is critical for generalizing findings.

Furthermore, triangulating survey data with actual performance metrics would strengthen the study's validity. This approach could provide a more holistic perspective and validate self-reported data, offering deeper insights into the use of TL skills.

Compliance with ethical standards

Ethical considerations

This study adhered to ethical standards, including obtaining informed consent and maintaining confidentiality, in accordance with the Declaration of Helsinki.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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