The Influence of Relational Transparency on Resilience of the Kenyan Health System

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Abstract

Relational transparency views authentic leadership from the relational theory. For this Study, it was evaluated using two sub-constructs: True self-expression and open information sharing The Study was carried out between March 2022 and September 2022. Level 5 and 6 hospitals that served 14 counties identified as high risk for COVID-19 in Kenya. A modified Authentic Leadership Questionnaire with a 5-likert scale was administered face-to-face, through email or through Whatsapp. The respondents consisted of 184 leaders in 26 hospitals: (two Level 6, and twenty-four Level 5 hospitals). Relational Transparency was highest in Nakuru County, lowest in Kakamega County. Level 6 hospitals revealed high scores of Relational Transparency. The Kenyan health system expressed a low score (15.4) and it did not influence Resilience index of the Kenyan Health System (rho = 0.115, no p value). This relationship was not moderated by Pandemic Occurrence. The Study recommended increased information sharing at both multi-level and multi-stakeholders. For this to be effective, the leaders need to identify effective modes of communication to serve the hospital fraternity; collaborate with other hospitals; coordinate with county, national government and other sectors; and, to engage the community. It is imperative that the sources of information are credible to prevent dissonant mental models and subsequent mental illness.

Keywords: Relational Transparency, Resilience, Leadership, Health

Introduction

Healthcare has been plagued by unprecedented and unanticipated shocks that have required innovative leadership for adaptation and resilience. The shocks are classified into infectious and non-infectious. Irrespective of the classification, these shocks, led to the death, displacement and disability of people and populations. Thus, have been likened to terrorist attacks (Bedford, et al., 2019). Thus, place-based leadership is proposed as a solution to resilience of these health systems.

Authentic leadership has been proposed as a transformational, ethical and contextual leadership style for such uncertainties. It allows for innovation in leadership thus, has been termed as innoveadership (Yüksel, 2017). Relational transparency is one of the four components of authentic leadership. The other three components are: Self-awareness, Internalized Moral Perspective and Balanced Processing.

Relational transparency is defined as leaders' management of personal emotions in order to identify with the purpose and role of their leadership (Taştan & Davoudi, 2019). It ensures bi-

directional flow of information thus aligning leaders and followers for adaptation and resilience.

In Kenya, lack of relational transparency was reflected by the Senators' insistence on a probe into the embezzlement of COVID-19 funds by the Ethics and Anti-Corruption Commission. This was in the background of a 2019 report of high perception of Corruption Index where Kenya was rated as 137th in the Kenya Corruption Rank (2020). The citizenry's disillusionment was confirmed by a geopoll to evaluate the leaders' efforts to control the pandemic in Africa. Kenyans were the least effusive about their leaders (Tyce, 2020).

This study was carried out to measure the influence of Relational transparency in the health sector and offer recommendations for any gaps that will be found. Relational transparency was studied using two subconstructs: True self-expression and open information sharing.

Theoretical Review

Relational transparency has been reframed to mean "'fidelity to purpose". This refers to the leaders' management of personal emotions in order to identify with the purpose and role of their leadership (Taştan & Davoudi, 2019). As a moderator, it enhances socially responsible leadership. Relational transparency has been studied as a unidirectional relationship from leaders to the followers. The reverse relationship – leader appreciating relational transparency from follower - is effective only when the leaders are considered to be humble. This has been proposed as the true definition of Relational Transparency (Rego et al., 2022).

Relational Transparency significantly moderates the relationship between leadership and ethical climate in various industries (Taştan & Davoudi, 2019). It positively affects team level affect based on trust or mistrust (Krejci, 2021), and enables leaders to improve job satisfaction through focusing their followers on legitimate tasks (Muntz et al., 2019). Measurement of Relational Transparency is through the Authentic Leadership Questionnaire. Analysis of the same depends on whether it is being investigated as an individual variable (Analysis of Variance), or as part of other independent variables (Structural Equation Modelling) or as a moderating variable.

This Study reviewed Relational Transparency as a bi-directional relationship. Two subconstructs were measured using the modified Authentic Leadership Questionnaire. These subconstructs are: True Self-Expression and Open Information Sharing.

True Self Expression

This is a result of self-concept and emotional awareness. Self-expression requires the leader to be reflective in order to develop their character and vision (O'Neill, 2013). The art of true self-expression is not natural. Therefore, language is the channel available to leaders to reframe their challenges and rally their followers towards action even in circumstances that are perilous to them (Souba, 2013). Souba (2013) also observed that true self-expression is the missing puzzle to sustainable transformation in the healthcare system. Kim et al. (2023) noted that true self-expression led to trust with co-workers and improved job performance.

True self-expression has been measured using a questionnaire, with a 7-point likert scale, administered to employees and their leaders. Content validity was confirmed, and factor analysis verified the construct validity (Kim et al., 2023). This Sstudy used the modified - Authentic Leadership Questionnaire with a 5-likert scale to measure true self-expression. Factor analysis was used to evaluate construct validity.

Open Information Sharing

Open information sharing is also referred to as health information exchange (HIE). It includes allowing patients access to relevant information that affects their health in a timely manner to facilitate decision making. This is facilitated by managing data privacy, integrity and consistency across various health facilities, and health-care workers that manage the same patient. Therefore, unlimited access to the patient is imperative while restricted access to the clinicians actively managing the patient is necessary. Use of a distributed ledger technology, a unique feature of block chain is recommended (Zhuang et al., 2020). Marchibroda (2007), noted that open information sharing is useful in the delivery of efficient, safe and quality healthcare at an affordable cost. Therefore, the information shared through health technology and electronic health systems needs to resonate with the prevailing health policies.

Open information sharing has been measured using web -based experimental designs to evaluate the patient perceptions. Areas evaluated included: exchange mechanisms (direct, patient centered, look-up block-chain); types of privacy (weak or strong); and types of health information (non-sensitive or sensitive) (Esmaeilzadeh & Mirzaei, 2019). Patients preferred if information was exchanged through blockchain to maintain security and confidentiality, shared regionally, and if they can opt-in (Esmaeilzadeh & Mirzaei 2018). Significant strides have been made to improve information sharing among the frontline health care workers (Unertl et al., 2012). Studies on the safe and reliable exchange of quality information across health facilities and multiple stakeholders are ongoing. For this study, open information sharing did not include the evaluation of health information technology. Instead, it evaluated the leaders' perception of the impact of the current health information exchange modalities and sough their recommendations on how to improve it.

Methodology

The study was guided by a pragmatic philosophy and adopted a convergent mixed method design. The sampling frame consisted of Level 5 and 6 hospitals which served 14 counties that had been identified as high risk for COVID-19 spread. The target population was hospital leaders of the Level 5 and 6 Hospitals. The sampling technique was purposive. (Executive-Order-No-2-of-2020 - National Emergency Response Committee on Coronavirus, 2020). It included: administrative leaders (Chiefs of Medical and Nursing services); leaders of the clinical departments that served affected patients who suffered from COVID-19 (Casualty, Laboratory, Radiology, Critical Care, Isolation wards, Infection Prevention Control, operating theatres); and leaders of departments that were identified as priority to delivery of the Kenya Essential Package of Health (KEPH) (IHME, 2020) – Pediatrics, Maternal and Child Health, Medical Outpatient Clinics; HIV/TB clinics. It included the leaders of departments which were handling COVID-19 patients, and departments that were offering essential services as prescribed by the Keya Health Policy.

Data was collected using a semi-structured modified Authentic Leadership Questionnaire. The questionnaire was modified by addition of Kruk's et al (2017), Resilience Index components as part of the questionnaire. Descriptive statistics were derived through means, standard deviations and sums. These were presented in tables. Inferential statistics were derived in a multi-step method. Kaiser-Meyer-Olkin was used to evaluate sampling adequacy. A score of more than 0.7 gave guidance to the use of principal factor analysis to test construct validity. Spearman's correlation was used to determine the direction of relationship between the independent and dependent variables. Finally, path analysis was determined using structural equation modeling.

Results

The Study results were presented in two sections: descriptive statistics and inferential statistics. They were presented in tables which were followed by a brief interpretation.

Descriptive Statistics

Table 1. Sum of Relational Transparency

Variable	Obs	Mean	Std. Dev.	Min	Max
Relational Transparency	184	15.7337	2.545704	7	20

Test scale = mean(unstandardized items) .

The sum of Relational Transparency was low at 15.7. According to Northouse (2016) any score in Authentic Leadership that is below 16 is low. This means that leaders in Kenya's health system had low levels of Relational Transparency.

Table 2. Relational Transparency Score

	(1)	(5)
	Resilience Index	**Relational Transparency**
Total	**91.87**	**78.67**
	(11.72)	**(12.73)**

Standard deviation in brackets

The influence of Relational Transparency on Resilience Index was 78.7% which was more than two standard deviations from Authentic leadership (8.6). This further confirmed the low level of Relational Transparency in the leaders in Kenya's health system.

Table 3. Kaiser-Meyer-Olkin Measure of Sampling Adequacy for Relational Transparency

Variable	kmo
Relation~113	0.4511
Relation~114	0.7008
Relation~215	0.8696
Relation~216	0.8459

The KMO score on Table 3 demonstrated a range of 0.45 to 0.84 with an average of 0.7. This denoted a middling sampling adequacy and allowed for further evaluation using factor analysis to derive the inferential statistics.

Table 4. Relational Transparency by County

	(5)
	Relational Transparency
Garissa	81.00
	(11.40)
Kakamega	80.00
	(8.292)
Kiambu	69.09
	(15.14)
Kisumu	76.62
	(11.55)
Machakos	81.25
	(9.564)
Mombasa	80.00
	(12.91)
Nairobi	79.53
	(13.64)
Nakuru	82.22
	(10.34)
Total	**78.67**
	(12.73)

Standard deviation in brackets

When the counties were compared, Nakuru, Machakos, Garissa, Kakamega had the highest scores: ranging from 80% - 82% while Kiambu had the lowest score (69.9%). The following had standard deviations of more than 2 from the mean (12.73) – Nakuru, Machakos, Kakamega and Kiambu (Table 4). This means that leaders in Nakuru, Machakos and Kakamega counties had the highest level of true self -expression and open information sharing while leaders in Kiambu County had the lowest level.

Table 5. Relational Transparency by Ownership type

	(5)
	Relational Transparency
Public	80.11
	(12.68)
Private	77.32
	(12.69)
Total	**78.67**
	(12.73)

Standard deviation in brackets

Table 5 compared the influence of Relational Transparency on Resilience Index by Ownership. Public hospitals scored 80% while private hospitals scored 77%. The standard deviation was 12.7 for each. This meant that there was no difference in true self-expression and open information sharing between private and public hospitals.

Table 6. Relational Transparency Hospital Hierarchy

	(5)
	Relational Transparency
Level 5 Hospitals	77.94 (12.96)
Level 6 Hospitals	85.00 (8.333)

Table 6 compared the influence of Relational Transparency on Resilience Index by hospital hierarchy. Level 6 hospitals scored 85% while Level 5 hospitals scored 77.9%. The standard deviation was 8.33 and 12.96 respectively. When compared to the standard deviation for Relational Transparency (12.7), Level 6 hospitals had a difference of more than 2 standard deviations while Level 5 hospitals were clustered to the mean. This means Level 6 hospitals were more expressive and open in sharing information. This could be attributed to the fact that they are teaching hospitals.

Inferential Statistics

Table 7. Correlations between Resilience Index and Relational Transparency variables

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**
Resilience Index	**1.000**				
		1.000			
			1.000		
				1.000	
Relational Transparency	0.115	0.296	0.265	0.420	**1.000**

The Spearman's correlation in Table 7 revealed a weakly positive linear correlation (rho = 0.115). This means that Relational Transparency weakly influences the Resilience Index.

Table 8. Influence of Relational Transparency on Resilience – Path Analysis

	(1)	(2)	(3)	(4)
Resilience Index (%)				
Relational Transparency Score (%)				0.106 (1.576)
Constant	66.39*** (8.347)	79.17*** (12.45)	67.69*** (10.67)	83.51*** (15.54)

t statistics in parentheses

* p<0.1, ** p<0.05, *** p<0.01

The path analysis between Relational Transparency and Resilience Index was poor with a coefficient of 0.01, (t =1.576, no p-value) (Table 9). This means that despite a weakly positive association between Relational Transparency and Resilience Index, it was not

significant. Therefore, the study failed to reject the null hypothesis: Relational transparency dose not influence Resilience Index.

Table 9. Influence of Relational Transparency on Resilience moderated for the Respective Aspect with Pandemic Occurrence

	(4)
Resilience Index (%)	
Relational Transparency Score (%)	-0.002
	(-0.016)
Relational Transparency*Pandemic Occurrence	0.005
	(1.260)
Constant	83.95***
	(15.66)

t statistics in parentheses

* p<0.1, ** p<0.05, ** p<0.01

The path analysis to evaluate the moderating effect of Pandemic Occurrence on the relationship between relational transparency and resilience had a co-efficient of 0.005 (t=1.26, no p value). This meant that pandemic occurrence did not moderate the relationship between Relational Transparency and Resilience Index (Table 9).

Discussion

The respondents consisted of 184 leaders from 26 tertiary hospitals (two Level 6 and twenty-four Level 5). Relational transparency was expressed highest in the following counties: Nakuru, Machakos and Kakamega. Kiambu County had the lowest expression of Relational Transparency. However, the leaders of Kenya's health system had low scores of Relational Transparency (15.7) and the KMO was middling (average = 0.7). Relational transparency had a small correlation (rho = 0.115) to the Resilience Index which was not significant (no p value). Thus, the study failed to reject the null hypothesis that Relational Transparency does not influence Resilience of the Kenyan Health System.

Relational Transparency is also known as vulnerability. It determines the weight and urgency of decision thus, confers diversity to a health system. It ensures accuracy, authenticity, timeliness, relevance, and concurrence of information being shared (Bunker, 2020). There was a lack of diversity in the study. This was indicated by large negative associations with: the knowledge of healthcare workers and facilities who can respond to a disaster, and how a disaster is communicated to the healthcare workers. This rendered the Kenyan health system vulnerable to poor decision making.

Sidiani and Rowe (2018) contrasted with the Study findings in their assertion that leader and follower values need to be congruent to promote progress, innovation, and behaviour change. This can be achieved through expression of humility and conveying respect to the team members. O'Donovan and McAuliffe (2020) study findings in Ireland contrasted with the study findings. In their study, the nurses defined actions that constitute true self-expression as: use of voice (freedom to express oneself and ask questions), learning (continuous improvement), support (positive interpersonal behaviours), and familiarity (bonding over time). Kaslow, et al. (2020) also disagreed with the Study findings. He defined initiatives by

leaders that would promote psychological wellbeing of healthcare workers during the pandemic. These are: providing support groups, participating in outreach and research, offering virtual well ness breaks, participating in advocacy initiatives to reduce disparities. Cavallo et al. (2020) study findings also contrasted the Study findings. They noted that clear messaging coupled with provision of personal protective equipment was essential in containment of COVID-19 in Italy.

Strömgren et al. (2017), disagreed with the Study findings. They asserted that Relational Transparency builds social capital when expressed through relational leadership. A study of hospital employees in Sweden revealed increased trust, recognition and norms of reciprocity in teams where the leaders were intentional about collaboration and coordination. Shanafelt et al. (2020) also got recorded findings contrary to the Study, in healthcare workers in the United States. American Healthcare workers expressed a desire for unambiguous communication regarding the protection and support of their families against COVID 19 pandemic.

In Australia, Bunker (2020) concurred with the Study by noting that lack of artificial intelligence led to digital destructive and dissonant mental models. This led to conflicting situational awareness and poor containment of COVID-19. This was enhanced by incomplete management information systems, lack of consensus by providers and suspicion by patients also leading to digital destruction and dissonant mental models. Sipior (2020) concurred with these findings in her study in the United Stated during the COVID-19 pandemic. She asserted that the accuracy of AI in real life will be lower than in the development phase. She recommended a diverse AI team in order to achieve highest system performance. The use of contact tracing apps in Japan, France and China affirmed Sipior's conclusions and aligned with the Study findings. Rowe (2020) concurred with the study findings by observing Australians' uptake of the contact tracing app was impressive. However, there was negligible utilization a month later. This phenomenon was attributed to a digital ethical dilemma "data first" or "health first". The citizenry feared that the government would use this information for marketing and election campaigns. The Japanese were slow adaptors. In contrast to the democratic countries, China, India and Qatar legally mandate their citizenry to use the apps (Fahey & Hino, 2020).

The Study findings contrasted with Saudi Arabia's response to Middle East Respiratory Virus. The weight and urgency in response to Middle East Respiratory Virus in Saudi Arabia was achieved through diversity. This included increased engagement of all staff in learning and knowledge of the outbreak, developing teamwork and trust, and harnessing collective leadership (Al Knawy et al., 2019). Arifah et al. (2018) findings that the Relational Transparency led to Resilience in Taiwan contrasted with the Study findings. The hospital encouraged staff members to openly share their fears, views and recommendations with leadership thus leading to containment of SARS outbreak. Baekkeskov (2016) also noted the role of innovative governance in communication as contributor to containment in Taiwan. This was further displayed during the COVID-19 pandemic by inclusion of Mandarin language in communicating at the borders in order to reach minorities (Wang et al., 2020).

The Study findings concurred with those in South Korea and Thailand where resilience was achieved despite poor relational transparency. The use of brute force in South Korea (Walensky & Rio, 2020) and Thailand (Maticka-Tyndale, 2017) during COVID-19 and HIV/AIDS pandemic respectively, led to containment. However, there are countries where brute force led to a protracted response to pandemics. China, Iran and North Korea had poor

containment to COVID-19 pandemic (Burkle, 2020) while Kenya had poor containment of HIV/AIDS (Maticka-Tyndale, 2017). Thus contrasting to the study findings.

Tippens (2020) contrasted with the Study findings. He reported demonstration of cultural competency by Congolese refugees in Kenya for resilience and assimilation. Men integrated into the community through formal bonding (bridging and linking networks) while women achieved this through informal bonding. Information sharing created shared situational awareness. It consisted of three components: information management; effective communication; and trust (Harrald & Jafferson, 2007). The Study found that there was a gap in information management. The qualitative feedback corroborated the findings through recommendation of increased engagement of various stakeholders to increase knowledge facilities, healthcare workers and how to respond to disasters. Gomez-Conde et al. (2020) concurred with the study recommendations. They described effective information management as the availability of a broad scope of information, numbers and calculations which enable leaders to manoeuvre in new conditions. This reduces organizational exposure and fosters trust with followers hence confers first-mover advantage. Asfaque (2020) agreed with the study recommendations by asserting that the use of standardization of health information exchange across national, organizational and patient levels. This is enhanced by collaboration across professional, focused leadership skills, and enhanced careers to improve core areas key in organizational success. Komang et al. (2020) studied health information exchange at a regional level - the Asia National Cancer Centers Alliance (ANCCA). ANCCA members shared their experiences and recommended country/ institution specific ways to deal with COVID-19. The strategies were based on zoning, intense triage, distancing, and use of telemedicine. This concurred with the Study recommendations.

Alam (2020) concurred with the Study recommendations. Thus, insisted that effective communication requires collaboration between political, administrative and civic actors; government presence on social media (as was demonstrated in Italy), and religious institutions (which was a weakness in Bangladesh) to manage misinformation.

Social mitigation strategies were effective COVID-19 containment strategies in China, Iran, South Korea, and Japan due to strong governmental framework and centralized authority. Containment in Italy was delayed due to lack of a homogenous governmental authority (Fields, Demirjian, & Gholamrezanezhad, 2020). This contrasted with the Study findings. Mehta, Sarvaiya and Chandani (2020) concurred with the Study findings and advised on how to use social media for community engageement in India. Netnography – was used to determine contextual interventions to COVIID-19 in India. The community appreciated the relational intelligence which was demonstrated through: leading from the front; collective consciousness; compassion and empathy; constant communication; and action rather than just words. Gostin (2020) concurred with the Study recommendations that trust in the leadership was the single most important indicator of success in resilience of health systems in the United States of America against pandemics. In Germany, Bartsch, Weber, and Büttgen (2020), asserted that task and relational leaders who were culturally sensitive when educating, communicating and mobilizing their staff members achieved resilience. Glover (2020) observed that cultural sensitivity was important to manage the distributional effects of the pandemic on the economy in the United States of America.

Prolonged response to Ebola in West Africa was blamed on cultural incompetence and poor relational transparency. This concurred with the Study findings. However, when burial practices were modified, and disease threats were redefined in folklore and traditional language the pandemic in Liberia, Mali and Ivory Coast was contained (Agogo et al., 2019).

Kittelsen and Keating (2019) were in accord with the Study recommendations as they recommended that strategies of intervention need to generate trust. This was based on the findings of mistrust between the public and the West African health system which led to a protracted reversal of Ebola. Xuequane (2020) contrasted with the Study findings when he lauded the Kenyan Ministry of Health for tapping into 53 million mobile subscribers to send out messages on preventive measures against COVID-19. This was validated by daily updates on the pandemic status by the Cabinet Secretary for Health. Thus, he was recognized as one of the emerging heroes because he inspired confidence, displayed determination, relied on evidence and demonstrated uncompromising leadership (Too, 2020). Hogan (2020) contrasted with the Study findings when he reported voluntary successful adoption of technology to improve Relational Transparency in Ireland. A collaborative platform – Raising Open and User-friendly Transparency Enabling Technologies for Public Administrators (ROUT-PA) – improved communication between the citizens and the public administrators.

Conclusion

The Study findings revealed a low mean sum for Relational Transparency = 15.9. There was a very weak positive linear correlation (rho = 0.115), and no path analysis (t = 1.576, p = no value). Therefore, the Study failed to reject the null hypothesis that Relational Transparency does not influence Resilience Index. The Study concluded that leaders of in the Kenyan Health system had low levels. Thus, the Study did not find its relevance in Authentic Leadership in the Kenyan Health System. This could be due to the digital era that has led to an infodemic which has led to cognitive dissonance due to lack of authentication of information being shared thus leading to mistrust.

Recommendations

The Study recommended increased capacity building in true self-expression and open information sharing. Moreover, further training in delegation, team management, role clarification and role clarification is recommended to foster trust among healthcare workers.

The Study recommended increased information sharing at multi-level and multi-stakeholder paradigms. Moreover, various population-centric modes of communication should be explored. However, in the event that artificial intelligence is utilized, the leaders are cautioned to ensure that they have trusted sources of information in order to avoid dissonant mental models.

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