

How Clinical Governance Shapes Quality of Care: The Mediating Role of Patient Safety Culture

Hitham Badie Youssef Mohamed^{1*}, Samir Youssef Marzouk², Aly Abdelhafiz Aly El-Sheikh Seoud³

^{1*}Doctorate Candidate, Productivity and Quality Institute (PQI), Arab Academy for Science, Technology and Maritime Transport, Cairo Branch, Master of Quality Management, MBA, TQM, Email: drhaythamhagrass@gmail.com

²Director, Productivity and Quality Institute (PQI), Arab Academy for Science, Technology and Maritime Transport, Cairo Branch, Ph.D. in Physics, Menoufia University, Egypt, Email: samir_marzouk2001@yahoo.com

³Professor at Productivity and Quality Institute (PQI), Arab Academy for Science, Technology and Maritime Transport, Cairo Branch, Doctor of Business Administration, Email: dr.aly.elsheikh@adj.aast.edu

Abstract

Purpose Clinical governance is widely implemented internationally, yet the mechanism by which it influences quality of care, and whether that mechanism operates uniformly across health systems with differing resource levels, remains untested within a single sample. This study examined whether patient safety culture mediates the relationship between clinical governance and quality of care, and whether perceptions differ between higher-resource and variable-resource health systems.

Methods A cross-sectional survey collected responses from 377 healthcare professionals in seven countries (Saudi Arabia, the United Arab Emirates, Kuwait, Egypt, Jordan, Iraq, and Lebanon) using a validated 41-item instrument measuring three constructs across eleven dimensions. Data were analysed using reliability testing, correlation, ordinary least squares regression, mediation analysis with an indirect-effect test, group comparison with false discovery rate correction, and importance-performance mapping.

Findings Clinical governance predicted patient safety culture ($\beta = 0.826$, $R^2 = 0.682$) and predicted quality of care as a total effect ($\beta = 0.580$, $R^2 = 0.337$). When both were entered jointly, the direct governance-to-quality path was not significant ($\beta = 0.093$, $p = 0.176$) while safety culture remained a strong predictor ($\beta = 0.590$, $p < 0.001$). The indirect effect accounted for 84.2% of the total effect, indicating full mediation. Respondents in higher-resource systems scored higher than those in variable-resource systems on all three constructs, with large effect sizes (Cohen $d = 0.78$ to 1.27). Freedom from blame was the lowest-scoring dimension measured.

Conclusion Clinical governance appears to influence quality of care predominantly through patient safety culture rather than directly, and perceptions diverge sharply along the resource gradient of the systems studied. Governance reform may require concurrent investment in safety culture, and aggregating health systems of differing resource levels obscures a difference exceeding one standard deviation.

Keywords: Clinical governance; Patient safety culture; Quality of care; Mediation analysis; Health system resourcing.

Introduction

The management of healthcare quality has shifted over recent decades from a focus on individual clinical competence toward the accountability of the organisation as a whole, a shift operationalised through clinical governance [1]. The concept originated in the United Kingdom following clinical failures that exposed the limits of profession-led assurance [2], and has since been promoted internationally through accreditation. A governance structure documented in policy is not equivalent to governance enacted in practice, however; whether formal structures improve care depends substantially on the frontline environment and the prevailing patient safety culture [3,4].

Across health systems undergoing rapid reform, governance frameworks are being implemented unevenly [5,6]. Two gaps in the existing evidence motivate this study. First, although a mediating role for safety culture has been proposed, few studies have measured clinical governance, patient safety culture, and quality of care concurrently within a single multinational sample, leaving the pathway largely untested outside the setting in which it was first proposed [7]. Second, research frequently aggregates health systems that differ substantially in resourcing,

infrastructure, and workforce capacity; empirical data quantifying the resulting divergence within a single study is largely absent [8,9].

Three features of the present design bear on what it can establish. Measuring all three constructs concurrently in one sample permits the mediating pathway to be estimated rather than inferred by comparison across separately conducted studies, which is the limitation of the existing regional evidence. Sampling across seven countries spanning both resource tiers allows resource-level grouping to function as a comparison rather than a background assumption, which a single-country design could not support. Adopting an instrument already validated elsewhere, rather than developing a new one, permits direct comparison with a prior test of the same structure and makes replication across settings interpretable [7]. The design remains cross-sectional, so it can establish statistical mediation and association but not temporal sequence, a boundary observed throughout the reporting that follows.

This study addresses both gaps. It tests four hypotheses: that clinical governance is positively associated with quality of care (H1); that clinical governance is positively associated with patient safety culture (H2); that perceptions differ by organisational grouping and by health system resource level (H3); and that patient safety culture mediates the governance-to-quality relationship (H4). The primary goal is to establish whether safety culture is the operative mechanism linking governance to quality, and to quantify the divergence between higher-resource and variable-resource systems within a single multinational sample.

Literature Review

Clinical governance

Clinical governance is most commonly defined as the system through which healthcare organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which clinical excellence can flourish [1]. The definition arose from United Kingdom health policy in the late 1990s, following clinical failures that exposed the limits of profession-led quality assurance and prompted a shift toward statutory organisational accountability [2]. Two readings of the construct have persisted since. The first treats governance as a compliance mechanism, a set of structures an organisation must demonstrate it possesses. The second treats it as a developmental process, in which those structures matter only insofar as they change how clinical work is actually performed [2,10]. The distinction is not merely semantic: it predicts whether governance is expected to improve outcomes directly or only through its effect on the working environment, which is the question this study examines empirically.

Operationally, clinical governance has conventionally been decomposed into pillars covering clinical effectiveness, risk management, audit, staff development, education, patient involvement, and information management. Brennan and Flynn [10] argue that its practical value lies less in any single pillar than in their integration, since the same activities pursued separately remain organisationally disconnected. More recent measurement work has consolidated this structure for survey administration. The instrument adopted in the present study measures clinical governance through five dimensions, shown in Figure 1A: quality improvement, risk management, freedom from blame and punishment, training and development, and organisational learning [7]. This five-dimension structure derives from the Clinical Governance Climate Questionnaire tradition, in which governance is assessed as staff perception of the prevailing climate rather than as documented policy [11]. That validation work identified the absence of unjust blame as among the strongest correlates of a mature governance climate, which anticipates a finding central to the present analysis.

Evidence on the antecedents and effects of clinical governance remains uneven. Structural mechanisms have some empirical support: integrating clinical professionals into hospital governing boards has been associated with improved organisational performance and patient experience [12]. Implementation research, by contrast, consistently identifies barriers that have proven resistant to policy intervention, including infrastructure deficits,

workforce shortages, and weak organisational learning routines [9,6]. Awareness of governance concepts has also been found to vary significantly by professional role within single institutions [5], which suggests that governance may be experienced differently at different levels of the same organisation.

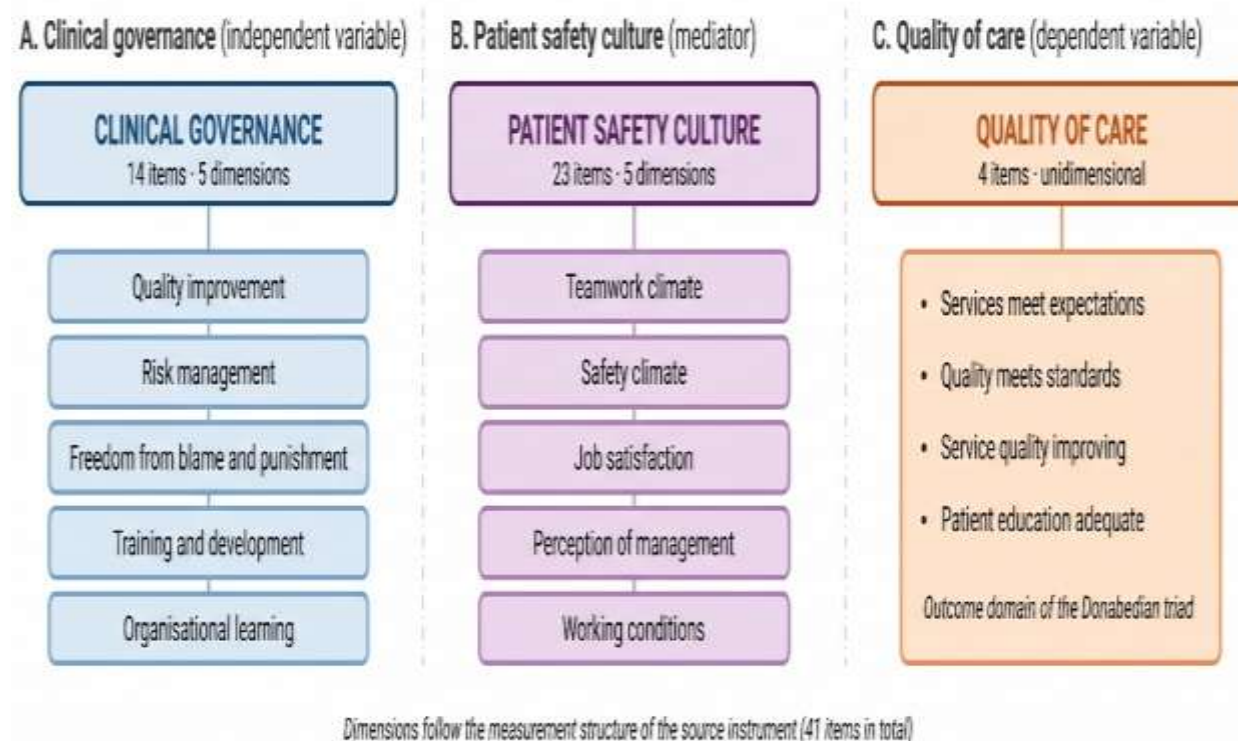


Fig. 1. Dimensional structure of the three study constructs. Panel A: clinical governance. Panel B: patient safety culture. Panel C: quality of care

Patient safety culture

Patient safety culture refers to the shared values, beliefs, and behavioural norms that determine how an organisation and its staff respond to risk, error, and the reporting of harm. The construct developed from systems approaches to error that reframed adverse events as products of latent organisational weakness rather than individual failure alone [13]. High reliability organisation theory extended this reasoning to healthcare, arguing that organisations sustaining safety under complexity share identifiable characteristics, including a collective preoccupation with failure and deference to frontline expertise over hierarchical rank [14]. Both accounts imply that safety is produced by conditions of work rather than by the diligence of individuals, and both position culture as the layer through which organisational arrangements reach clinical practice.

The instrument used in the present study measures patient safety culture through five dimensions, shown in Figure 1B: teamwork climate, safety climate, job satisfaction, perception of management, and working conditions [7]. These dimensions span both relational conditions, such as how colleagues coordinate and whether staff feel able to raise concerns, and structural conditions, such as staffing adequacy and workload. Evidence from settings comparable to those sampled here indicates that the relational dimensions are frequently the weakest. Fear of blame has been identified as the largest single barrier to incident reporting among nursing staff [15], hierarchical structures have been found to discourage junior staff from voicing concerns to senior clinicians [16], and non-punitive reporting environments remain the exception rather than the norm across the wider evidence base [8].

A recurring theme in this literature concerns what governance mechanisms actually achieve when the cultural conditions are unfavourable. Reviewing incident-reporting systems, Stavropoulou et al. [4] distinguish single-loop

learning, in which specific processes are adjusted in response to failures, from double-loop learning, in which underlying assumptions and norms change. Reporting systems were found to generate the former far more reliably than the latter. If that pattern generalises, then governance structures may reliably alter procedure while affecting outcomes only where they also alter culture, a proposition that motivates the mediating role tested in this study.

Quality of care

Quality of care is conventionally defined as the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. Its dominant analytic framework remains the triad proposed by Donabedian [17], which distinguishes structure, the resources and organisational arrangements available; process, the activities carried out in delivering care; and outcome, the resulting change in health status. The triad supplies an ordering logic rather than a measurement scheme: structure conditions process, and process conditions outcome. That ordering is directly relevant here, since it locates clinical governance in the structure domain, patient safety culture in the process domain, and quality of care in the outcome domain, and predicts that the relationship between the first and the third should operate through the second.

Quality of care is multidimensional in principle, spanning effectiveness, safety, timeliness, equity, efficiency, and patient-centredness. In the present study, however, it is measured as a single composite construct of four items, following the source instrument [7]. These items ask whether services meet patient expectations, whether the quality of care meets required standards, whether service quality is improving, and whether patient education is adequate, and are shown in Figure 1C. The items are global evaluative judgements spanning responsiveness, standard adherence, trajectory, and communication rather than indicators of a single narrow attribute. Studies pairing governance reform with recorded clinical indicators have reported that administrative and efficiency measures may improve while safety indicators do not, or move in the opposite direction, during early implementation [18]. The distinction between perceived and recorded quality is therefore substantive rather than technical, and is treated as a limitation in the present study.

Research model and hypotheses

Taken together, the three literatures support a model in which clinical governance functions as a structural antecedent, patient safety culture as an intervening process, and quality of care as the outcome. Governance establishes the accountability arrangements, audit systems, and developmental routines within which clinical work is organised. Those arrangements shape the conditions frontline staff experience, including whether concerns can be raised without reprisal and whether teams are adequately supported. Those conditions in turn determine whether care is delivered reliably. The model is shown in Figure 2.

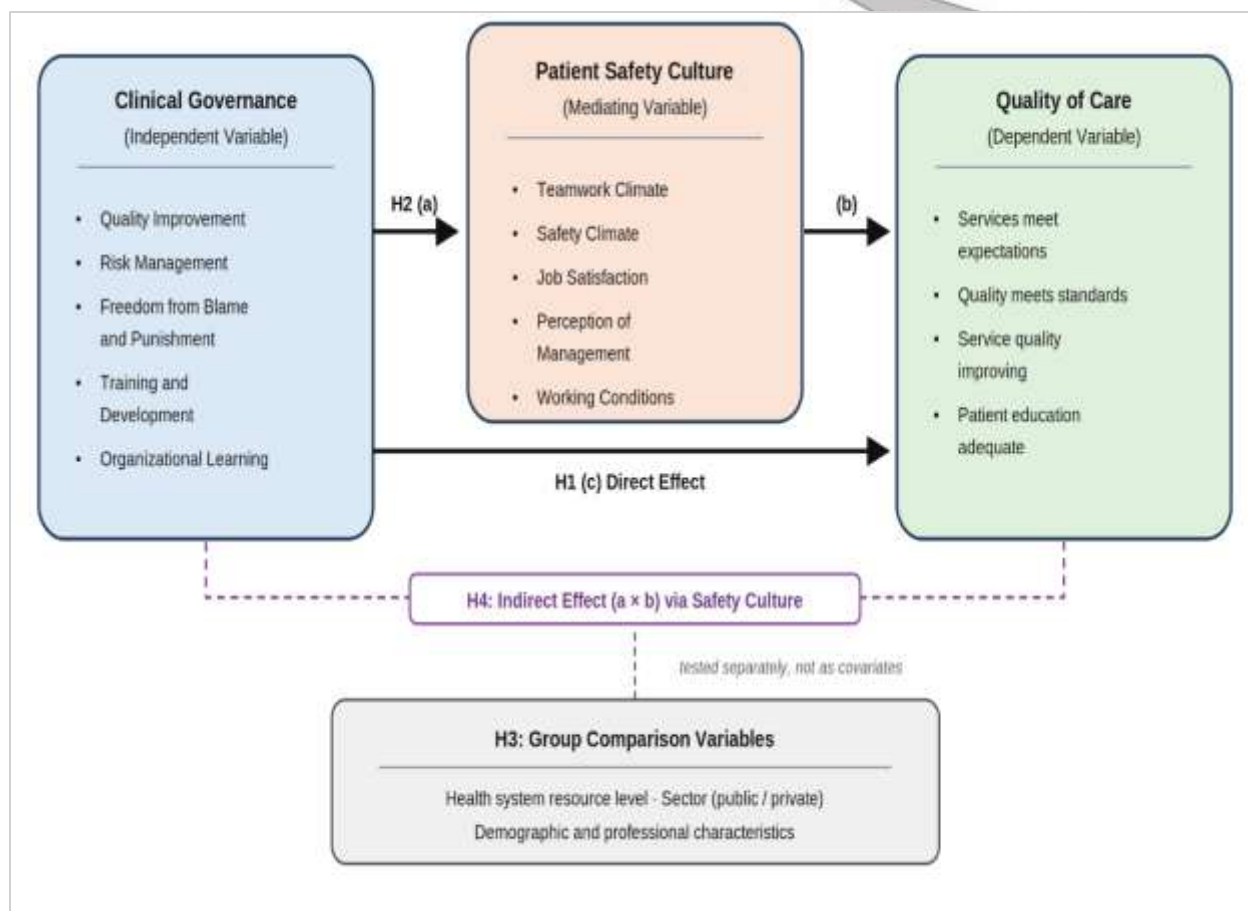


Fig. 2. Research model and hypotheses

Four hypotheses follow. The first proposes that clinical governance is positively associated with quality of care, corresponding to the total effect of the antecedent on the outcome (H1, path c). The second proposes that clinical governance is positively associated with patient safety culture (H2, path a). The third proposes that perceptions of these constructs differ by organisational grouping and by health system resource level, on the reasoning that governance frameworks presuppose infrastructure and workforce conditions that are unevenly distributed (H3). The fourth, and central, hypothesis proposes that patient safety culture mediates the relationship between clinical governance and quality of care, such that the indirect path through culture accounts for a substantial proportion of the total effect (H4, the product of paths a and b).

This configuration has been tested previously in a single national setting, where the direct governance-to-quality path was not significant once safety culture was modelled and mediation was full [7]. Whether that structure holds in health systems differing substantially in resourcing has not been established, and constitutes the empirical question of the present study.

Methods

Study design and reporting

This was a cross-sectional, observational survey study. Reporting follows the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guideline for cross-sectional studies [19].

Participants and setting

The target population comprised multidisciplinary healthcare providers, including physicians, nurses, pharmacists, allied health professionals, technicians, and staff in quality and patient safety roles, employed in healthcare facilities in seven countries. Systems were grouped a priori by resource level using Gulf Cooperation Council (GCC) membership as the operational criterion: higher-resource systems comprised Saudi Arabia, the United Arab Emirates, and Kuwait, and variable-resource systems comprised Egypt, Jordan, Iraq, and Lebanon. Eligibility required current employment in a healthcare facility in one of these seven countries. The study makes no claim to represent any wider geographic region; the seven countries were those accessible through the professional networks used for distribution, and findings should be interpreted as characterising this multinational sample rather than a defined regional population. Staff in administrative and managerial roles within healthcare facilities were retained rather than excluded, since governance climate is a facility-level property that such staff both experience and shape, and their inclusion permits the comparison of managerial and frontline perceptions.

Sampling and sample size

A non-probability strategy combining purposive and snowball elements was used, since no consolidated multinational registry of healthcare personnel exists across the seven countries. The questionnaire was distributed through verified professional networks, with recipients able to forward it to eligible colleagues. Sample size adequacy was evaluated against multiple benchmarks. The item-to-response ratio of 5 to 10 per item across 41 items indicates 205 to 410 [20]; power analysis for a medium correlation at 80% power requires 84 [21]. A sensitivity analysis at the achieved sample indicated 80% power to detect correlations of $r = 0.144$ or larger, so the sample was well powered for the effects examined.

Instrument and variables

Data were collected through a self-administered online questionnaire adapting a validated 41-item instrument that tested the same three-construct structure in an Indonesian setting [7]. Clinical governance (independent variable) was measured by 14 items across five dimensions: quality improvement, risk management, freedom from blame and punishment, training and development, and organisational learning. Patient safety culture (mediator) was measured by 23 items across five dimensions: teamwork climate, safety climate, job satisfaction, perception of management, and working conditions. Quality of care (outcome) was measured by four items. All construct items used a five-point Likert scale. Ten demographic and organisational variables were also collected. Composite scores were computed as unweighted item means, preserving the original metric.

The instrument was administered bilingually in Arabic and English, with respondents selecting their preferred language. The Arabic version was translated from the English source by a bilingual subject-matter expert in healthcare quality and reviewed by a multidisciplinary group of clinicians and administrators and by academic supervisors. Independent back-translation and formal cognitive pre-testing were not undertaken, which is acknowledged as a limitation.

Data collection

Data were collected electronically following ethical approval. The opening section functioned as a mandatory consent gateway, and every subsequent item was configured as mandatory, which eliminated item-level missing data by design. No personally identifying information was collected. All 377 responses received were retained; no exclusions or data cleaning were required, since the mandatory-response design prevented incomplete or out-of-range entries.

Statistical analysis

Analyses were conducted in Python 3.12 at an alpha of 0.05, two-tailed. Internal consistency was assessed by Cronbach alpha, with 0.70 as the acceptability threshold [20]. Associations were examined by Pearson correlation. Three ordinary least squares regression models tested the hypothesised paths, with mediation assessed both

through the causal-steps attenuation pattern and through a direct test of the indirect effect, the latter being the substantive test of mediation [22]. Group differences were tested by independent-samples t-test with the Welch correction and by one-way analysis of variance with Tukey post-hoc comparison. The resource-level comparison aggregated countries into GCC and non-GCC cohorts. Because 30 demographic comparisons were conducted, the Benjamini-Hochberg false discovery rate procedure was applied to that family of tests [23]. Because all constructs were self-reported within one instrument, the potential for common method variance was considered in interpreting the magnitude of the observed associations [24]. Finally, an importance-performance map analysis was conducted at dimension level, with importance operationalised as each dimension's correlation with quality of care and performance as its observed mean [25].

Results

Sample characteristics

The sample comprised 377 healthcare professionals in seven countries, with the largest national contributions from Egypt ($n = 107$) and Saudi Arabia ($n = 88$), and the smallest from Lebanon ($n = 28$). Grouped by resource level, 159 respondents (42.2%) worked in higher-resource systems and 218 (57.8%) in variable-resource systems. Country-level cell sizes were unequal and were not proportional to national healthcare workforce size. The full demographic profile is presented in Table 1.

Table 1. Demographic and organisational characteristics of respondents ($n = 377$)

Variable	Category	n	%
Gender	Male	198	52.5
	Female	179	47.5
Age Group	18–24 years	31	8.2
	25–34 years	137	36.3
	35–44 years	122	32.4
	45–54 years	52	13.8
	55–60 years	34	9.0
	More than 60 years	1	0.3
Education Level	Diploma degree	46	12.2
	Bachelor's degree	196	52.0
	Master's degree	94	24.9
	Doctorate (PhD/MD)	41	10.9
Total Experience	Less than 5 years	75	19.9
	6–10 years	85	22.5
	11–15 years	65	17.2
	16–20 years	83	22.0
	More than 20 years	69	18.3

Variable	Category	n	%
Current Position	Nurse	142	37.7
	Physician/Surgeon	114	30.2
	Specialist/Technician	57	15.1
	Quality & Patient Safety	16	4.2
	Pharmacist	14	3.7
	Administrative	12	3.2
	Other	22	5.8
Healthcare Sector	Public Sector	224	59.4
	Private Sector	153	40.6
Place of Work	Hospital	266	70.6
	Primary Healthcare Center	46	12.2
	Ambulatory Center	19	5.0
	Physiotherapy Center	18	4.8
	Other (Lab, Radiology, etc.)	28	7.4
Country	Egypt	107	28.4
	Saudi Arabia	88	23.3
	Iraq	43	11.4
	Jordan	40	10.6
	Kuwait	37	9.8
	UAE	34	9.0
	Lebanon	28	7.4
Employment Level	Healthcare Provider	251	66.6
	Middle Management	58	15.4
	Senior Management	34	9.0
	Administrative	34	9.0
Experience in Current Position	11 to 15 years	68	18
	16 to 20 years	75	20
	6 to 10 years	77	20
	Less than 5 years	89	24
	more than 20 years	68	18

Reliability

Internal consistency was acceptable for clinical governance ($\alpha = 0.788$) and good for patient safety culture ($\alpha = 0.861$). The four-item quality of care scale returned $\alpha = 0.601$, below the conventional threshold; because measurement error attenuates rather than inflates observed associations, relationships involving this construct are likely to be understated rather than overstated.

Descriptive statistics and correlations

All three constructs fell within the moderate band of the scale: clinical governance ($M = 3.292$, $SD = 0.604$), patient safety culture ($M = 3.325$, $SD = 0.582$), and quality of care ($M = 3.590$, $SD = 0.660$). Dimension-level scores are reported in Table 2. Among the eleven dimensions, freedom from blame and punishment recorded the lowest mean ($M = 3.102$) and working conditions the second lowest ($M = 3.198$), while dimensions describing formal governance machinery, risk management ($M = 3.364$) and quality improvement ($M = 3.360$), scored higher. The two lowest-scoring dimensions therefore both concern the conditions under which staff can raise concerns and work safely, rather than the presence of formal systems.

Table 2. Descriptive statistics for study constructs and dimensions (n = 377)

Construct / dimension	Mean	Standard deviation	Minimum	Maximum	r with quality of care
Clinical governance (overall)	3.292	0.604	1.36	5.00	0.580
Quality improvement	3.360	0.709	1.40	5.00	0.513
Risk management	3.364	0.813	1.00	5.00	0.476
Freedom from blame and punishment	3.102	0.800	1.00	5.00	0.357
Training and development	3.286	0.964	1.00	5.00	0.380
Organisational learning	3.316	1.166	1.00	5.00	0.287
Patient safety culture (overall)	3.325	0.582	1.22	5.00	0.667
Teamwork climate	3.367	0.717	1.20	5.00	0.519
Safety climate	3.342	0.756	1.00	5.00	0.508
Job satisfaction	3.363	0.746	1.00	5.00	0.555
Perception of management	3.334	0.798	1.00	5.00	0.551
Working conditions	3.198	0.722	1.00	5.00	0.459
Quality of care (overall)	3.590	0.660	1.50	5.00	—

All inter-construct correlations were positive and significant: clinical governance with patient safety culture ($r = 0.826$), patient safety culture with quality of care ($r = 0.667$), and clinical governance with quality of care ($r = 0.580$), all $p < 0.001$. Construct correlations are reported in Table 3.

Table 3. Inter-construct correlations (n = 377)

Construct	1	2	3
1. Clinical governance	1.000		

Construct	1	2	3
2. Patient safety culture	0.826*	1.000	
3. Quality of care	0.580*	0.667*	1.000

* $p < 0.001$, two-tailed.

Regression and mediation

Clinical governance significantly predicted quality of care as a total effect ($\beta = 0.580$, $R^2 = 0.337$, $F(1, 375) = 190.3$, $p < 0.001$), supporting H1, and significantly predicted patient safety culture ($\beta = 0.826$, $R^2 = 0.682$, $F(1, 375) = 804.3$, $p < 0.001$), supporting H2. In the joint model predicting quality of care ($R^2 = 0.448$), the direct governance path was not significant ($\beta = 0.093$, $p = 0.176$) while patient safety culture was ($\beta = 0.590$, $p < 0.001$). The indirect effect through safety culture was significant and accounted for 84.2% of the total effect, indicating full mediation and supporting H4. Model coefficients are reported in Table 4, and the mediation pathway is shown in Figure 3.

Table 4. Regression models predicting patient safety culture and quality of care (N = 377)

Model / predictor	B	SE	beta	p	R-squared
Model 1: DV = Quality of care					0.337
Clinical governance	0.634	0.046	0.580	< 0.001	
Model 2: DV = Patient safety culture					0.682
Clinical governance	0.797	0.028	0.826	< 0.001	
Model 3: DV = Quality of care					0.448
Clinical governance	0.101	0.074	0.093	0.176	
Patient safety culture	0.669	0.077	0.590	< 0.001	

DV = dependent variable. Change in R-squared from Model 1 to Model 3 = 0.111. Variance inflation factor = 3.15 for both predictors in Model 3.

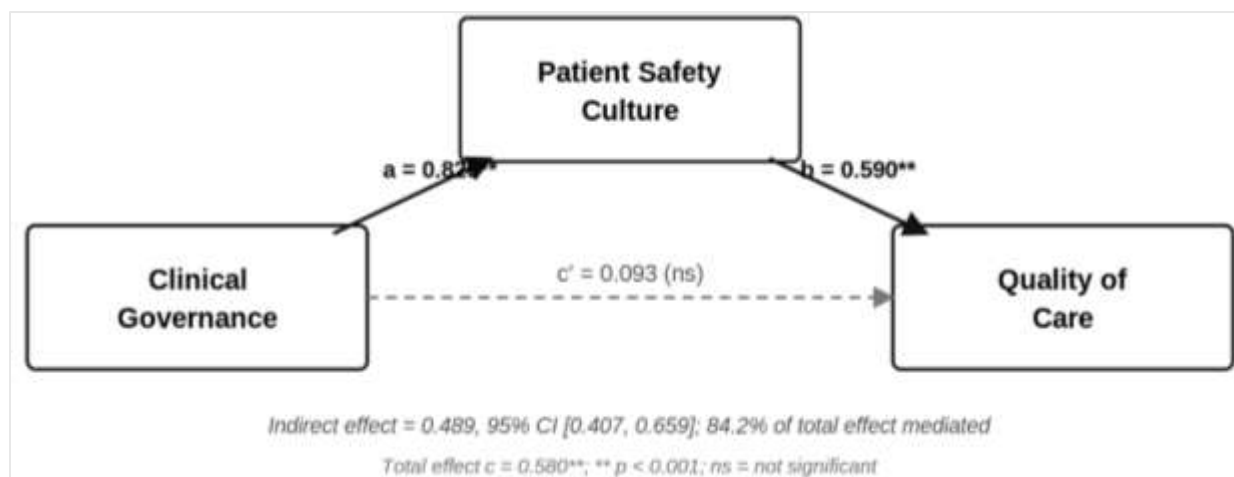


Fig. 3. Mediation of the clinical governance to quality of care relationship by patient safety culture

This structure closely replicates the source study conducted in a different region and sector, in which the direct path was likewise non-significant and mediation full [7]. The convergence of two independent samples on the same structural conclusion strengthens confidence that the mediating role of safety culture is not specific to one national context, although both studies share a self-report design and are therefore subject to the same methodological caveat.

Group differences

Of 30 demographic comparisons, 15 were significant before correction and 8 survived false discovery rate correction, concentrated in three variables: country of practice, healthcare sector, and age group. Individual and biographical characteristics, including gender, education, and total experience, showed no significant differences. The resource-level comparison, specified as the primary grouping test, showed that respondents in higher-resource systems scored significantly higher than those in variable-resource systems on all three constructs, with large effect sizes: clinical governance ($d = 1.16$), patient safety culture ($d = 1.27$), and quality of care ($d = 0.78$), all $p < 0.001$. These were the largest effects observed in the study. H3 is therefore partially supported: differences were robust for health system resource level, country of practice, healthcare sector, and age group, but those by professional position and employment level did not survive correction, and individual biographical characteristics showed no differences at all. Group comparisons are reported in Table 5, and both the aggregated and country-level contrasts are shown in Figure 4. Country-level scores indicate that the divide is not uniform within groups: Kuwait scored closer to the variable-resource group than to the other two higher-resource systems. Measurement invariance across groups was not tested, so a portion of this difference may reflect differing interpretation of items; the magnitude makes it implausible that interpretation accounts for all of it.

Table 5. Effect decomposition and resource-level comparison

Effect / comparison	Coefficient / t	Standardised / d	95% CI / p
Total effect (governance to quality)	0.634	0.580	[0.544, 0.724]
Direct effect	0.101	0.093	[-0.045, 0.247], ns
Indirect effect via safety culture	0.533	0.489	[0.407, 0.659]; 84.2% mediated
Higher- vs variable-resource: clinical governance	$t = 11.31$	$d = 1.16$	$p < 0.001$
Higher- vs variable-resource: safety culture	$t = 12.26$	$d = 1.27$	$p < 0.001$
Higher- vs variable-resource: quality of care	$t = 7.46$	$d = 0.78$	$p < 0.001$

Higher-resource $n = 159$, variable-resource $n = 218$. Indirect-effect confidence interval estimated by the Sobel method. Welch correction applied to all t-tests.

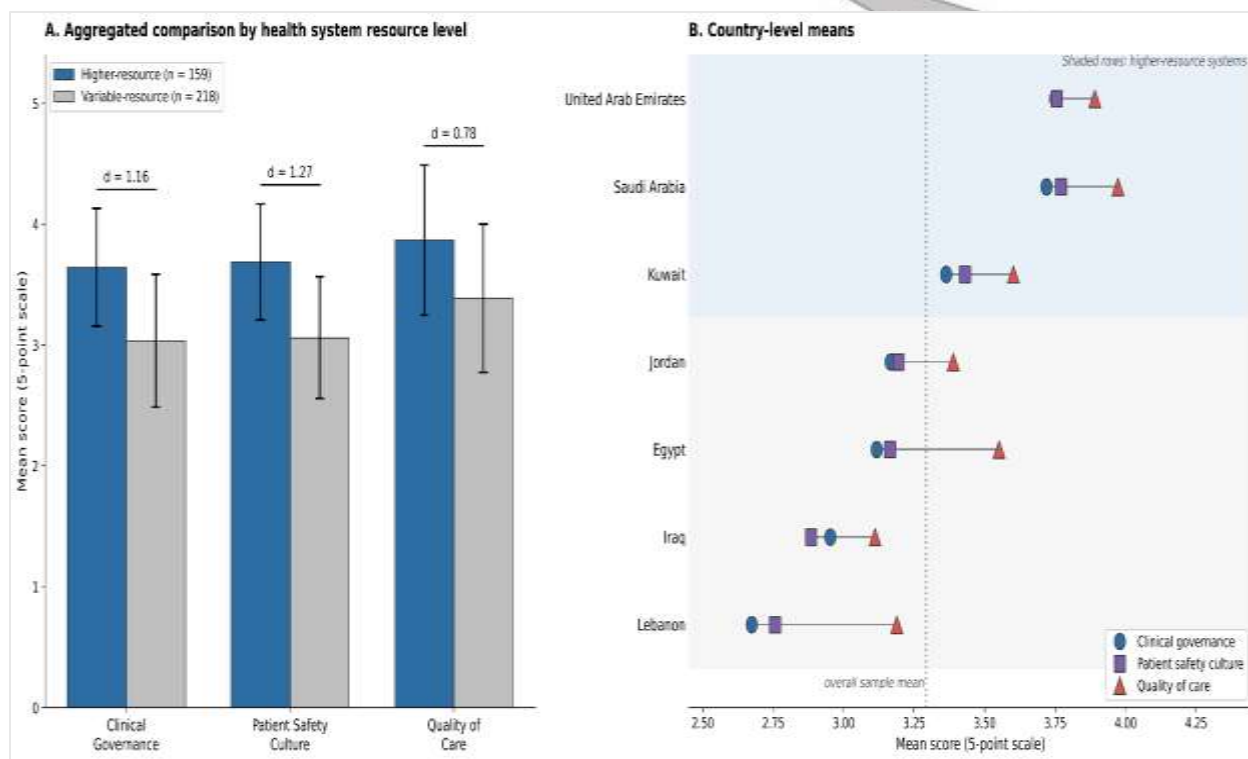


Fig. 4. Construct scores by health system resource level and by country.

Panel A: respondents in higher-resource systems ($n = 159$) scored significantly higher than those in variable-resource systems ($n = 218$) on all three constructs (all $p < 0.001$; Cohen $d = 1.16, 1.27$, and 0.78 respectively); error bars represent one standard deviation. **Panel B:** country-level means ordered by clinical governance score, with higher-resource systems shaded. Kuwait sits closer to the variable-resource group than to the other two higher-resource systems, indicating that the divide is not uniform within groups. The dotted line marks the overall sample mean.

Among individual grouping variables, country of practice produced the strongest differences (clinical governance $F = 28.20$, patient safety culture $F = 33.77$, quality of care $F = 15.06$, all $p < 0.001$), with the United Arab Emirates and Saudi Arabia scoring highest and Lebanon and Iraq lowest. Healthcare sector differences were significant for clinical governance (public $M = 3.180$, private $M = 3.457$, $t = -4.29$, $p < 0.001$) and patient safety culture (public $M = 3.217$, private $M = 3.485$, $t = -4.25$, $p < 0.001$), with private-sector respondents scoring higher; the corresponding sector difference for quality of care was significant only before correction ($p = 0.025$) and is therefore reported as provisional. Age group differences were significant for all three constructs and survived correction in each case (clinical governance $F = 4.28$, patient safety culture $F = 6.10$, quality of care $F = 3.08$).

Differences by current professional position ($p = 0.021$ and 0.024 for clinical governance and patient safety culture) and by employment level ($p = 0.046$ and 0.017) were significant before correction but did not survive adjustment, and are reported as provisional. In both, respondents at senior and managerial levels reported more favourable perceptions than frontline staff. Gender, education level, total professional experience, and place of work produced no significant differences on any construct, with all associated p values above 0.25 .

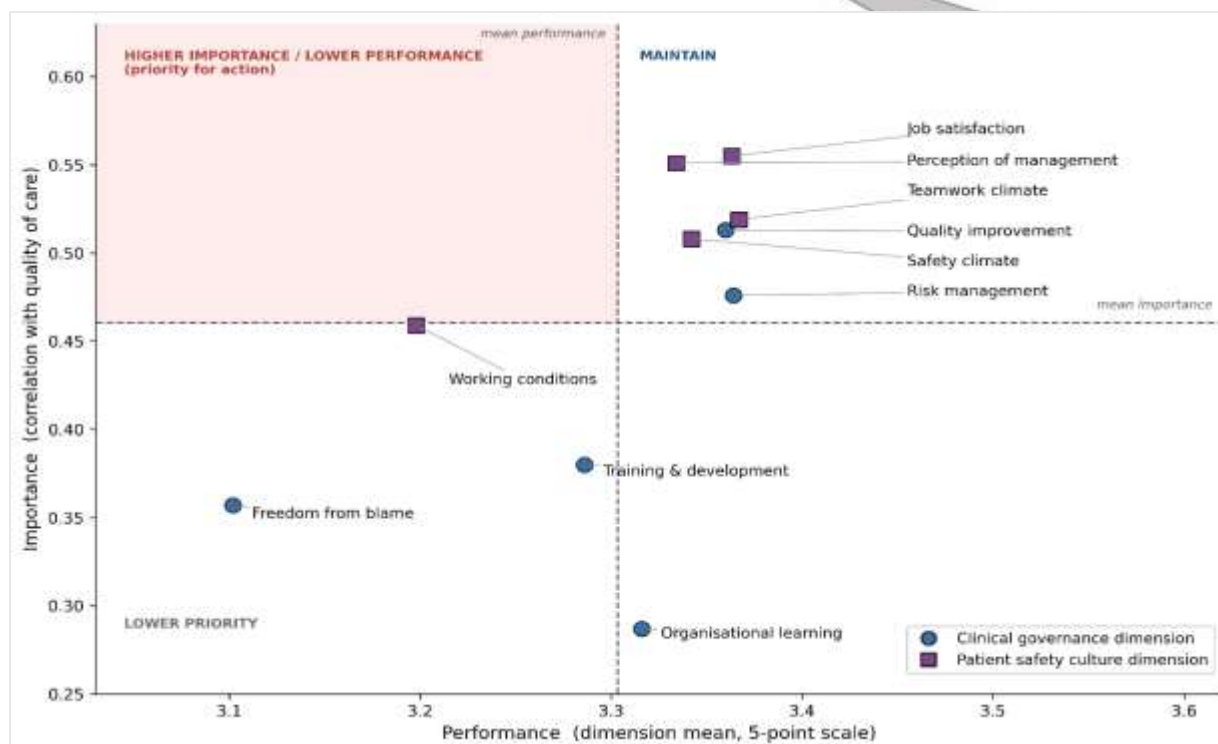


Fig. 5. Importance-performance map of the eleven study dimensions.

Importance is the Pearson correlation between each dimension and quality of care; performance is the observed dimension mean on the five-point scale. Dashed lines mark the grand mean of each axis, and the shaded quadrant denotes higher importance with lower performance, conventionally the priority for intervention. Circles denote clinical governance dimensions and squares patient safety culture dimensions.

Dimension-level importance and performance

To identify where improvement effort would yield the greatest return, each dimension was plotted by importance against performance, as shown in Figure 5. Job satisfaction ($r = 0.555$) and perception of management ($r = 0.551$) were most strongly associated with quality of care, followed by teamwork climate ($r = 0.519$) and quality improvement ($r = 0.513$); organisational learning was weakest ($r = 0.287$). Freedom from blame combined below-average importance with the lowest performance of any dimension, and working conditions sat close to the importance mean with the second lowest performance. No dimension occupied the high-importance, low-performance quadrant, indicating that the dimensions most strongly related to quality are also those currently performing best; the improvement opportunity lies instead in the two underperforming dimensions concerning blame and working conditions.

Discussion

This study found that clinical governance is associated with quality of care predominantly through patient safety culture rather than directly. The direct path, significant when governance was considered alone, became non-significant once safety culture was modelled, with the indirect path accounting for the large majority of the total effect. This pattern maps onto the structure-process-outcome logic [17], positioning governance as a structural antecedent whose effect is transmitted through the process layer of safety culture. The finding speaks to the longstanding distinction between governance as compliance and governance as organisational development [2]: if

governance acted on quality directly, implementing structures would suffice, but the present results indicate that structures matter to the extent that they alter frontline conditions.

The mediation structure reconciles an apparent contradiction in the existing literature. A pre-post study in Egyptian hospitals found that governance implementation improved administrative efficiency while coinciding with increases in hospital-acquired pneumonia and readmission [18]. Under full mediation, a reform introduced faster than safety culture can adjust would be expected to yield exactly this pattern, with process indicators improving before the slower cultural change registers. Qualitative evidence from Iran, in which governance was experienced as added documentation burden without corresponding cultural change, is consistent with this interpretation [26,9]. The two bodies of evidence describe different phases of the same process rather than contradictory findings.

Freedom from blame recorded the lowest score of any dimension measured. This aligns with patient safety research identifying fear of blame as a dominant barrier to reporting [15,16], and it carries particular weight given that freedom from unjust blame is among the strongest correlates of a mature governance climate [11] and that deference to frontline expertise is a defining feature of high reliability organisations [14]. If safety culture is the mechanism through which governance reaches quality, and freedom from blame is a precondition for safety culture, then blame culture represents the binding constraint on governance effectiveness across the sampled systems. The importance-performance mapping supports this reading: blame and working conditions are the two dimensions where measured performance is weakest, and both concern enacted conditions rather than documented structures. The divide by resource level was the largest effect in the study, exceeding one standard deviation on both organisational constructs. This provides direct empirical support against aggregating health systems that differ materially in resourcing, and is consistent with the divergent adoption pathways documented for higher-resource and variable-resource systems [27,28] and with evidence that governance outcomes are shaped more by pre-existing system structure than by the formal model adopted [29]. The gradient was steeper for the organisational constructs than for perceived quality, consistent with the mediation structure, since resourcing appears to act most directly on governance and culture. The country-level data add a qualification that the binary comparison obscures: variation within groups is substantial, and the dichotomy used here should be treated as a useful analytic approximation rather than a natural boundary. Sector and workforce capability may underlie part of this divide [30,31].

The absence of biographical effects deserves note alongside the significant findings. Gender, education, and total professional experience showed no relationship with any construct. This null result strengthens the interpretation of the significant effects: if perceptions varied systematically by who respondents are, the observed country and sector differences could plausibly reflect compositional differences in workforce make-up. That they do not supports reading the organisational effects as properties of the settings themselves rather than of the people staffing them.

Strengths and limitations

Four features strengthen confidence in these findings. Measuring all three constructs concurrently within one sample allows the mediating pathway to be estimated directly rather than assembled from separately conducted studies, which addresses the principal gap in the existing evidence. Sampling across seven countries provides variation in the resource contrast that single-country designs cannot supply, and includes several countries for which facility-level evidence has been scarce. The structural result independently replicates a prior test of the same model conducted in a different region and sector [7], and replication across contexts is the mechanism by which a finding moves from local observation toward general claim. Finally, applying false discovery rate correction across the family of demographic comparisons, and reporting sensitivity analysis alongside conventional sample size benchmarks, distinguishes robust findings from those detectable only at an uncorrected threshold.

Several limitations qualify the conclusions. The cross-sectional design establishes statistical mediation but not temporal precedence, so the pathway is an inference supported by theory rather than a demonstrated sequence; the data are equally consistent with reciprocal influence between safety culture and perceived quality. Common

method variance may inflate the observed associations, since all constructs were self-reported within one instrument at one time, and the path coefficients should accordingly be read as upper-bound estimates [24]. No statistical diagnostic for common method variance was applied in this study, so its magnitude in these data is unknown. That the result replicates an independent study offers partial reassurance but does not resolve the concern, since that study shares the same methodological configuration.

The four-item outcome scale returned an internal consistency coefficient below the conventional threshold. Because measurement error attenuates rather than inflates observed associations, the relationships involving quality of care are likely understated rather than overstated, and the difference by resource level on that construct may likewise be conservative; a longer validated outcome measure would nonetheless permit more precise estimation. Measurement invariance across the compared groups was not established, so an unknown portion of the between-group difference may reflect differing interpretation of items rather than differing conditions, a concern that is not merely technical where items concern blame and willingness to raise concerns. Independent back-translation of the Arabic instrument was not undertaken, leaving semantic equivalence between language versions unverified. Non-probability sampling precludes population estimates and a computable response rate, and country representation reflects network reach rather than workforce size. The seven countries sampled do not constitute a defined geographic region, and no inference to any wider regional population is intended or supported; the grouping by resource level is an analytic device applied to this sample rather than a claim about health systems generally. Finally, the dimensional structure was adopted from the source instrument without confirmatory factor analysis in this sample.

These constraints define the priority for subsequent work: a longitudinal design pairing self-reported governance and culture with independently recorded outcome data, such as facility-level infection, readmission, or length-of-stay indicators, would establish temporal ordering while breaking the common-method dependency that constrains both this study and its predecessor.

Implications for practice and policy

Three implications follow, with the confidence attaching to each governed by the strength of the supporting evidence. First, and most firmly grounded, the mediation finding indicates that governance structures introduced without corresponding attention to safety culture are unlikely to improve quality. Organisations implementing or revising governance frameworks should therefore treat investment in psychological safety, non-punitive reporting, and teamwork as a component of the reform rather than as a downstream consequence of it. The Egyptian evidence discussed above suggests that reforms sequenced otherwise may temporarily worsen safety indicators during transition.

Second, the dimension-level results identify where effort is best directed. Freedom from blame recorded the lowest performance of any dimension measured, and working conditions the second lowest, while the dimensions most strongly associated with quality of care were already performing comparatively well. Interventions targeting how incident reports are handled, whether reporting carries consequences for the reporter, and whether the distinction between blameless error and culpable conduct is applied visibly and consistently are largely procedural rather than capital-intensive, which makes them tractable for resource-constrained systems.

Third, the magnitude of the difference by resource level indicates that governance frameworks presuppose conditions unevenly present across systems. Health systems should assess contextual readiness, particularly information system maturity and staffing adequacy, before adopting frameworks developed for better-resourced settings, and should adapt rather than import where readiness is limited. The within-group variation observed here further suggests that readiness assessment is better conducted at system or facility level than inferred from any broader classification.

Conclusion

Clinical governance appears to reach quality of care through patient safety culture rather than independently of it, and perceptions diverge sharply along the resource gradient of the systems studied. Governance reform introduced without concurrent investment in non-punitive reporting and working conditions is unlikely to improve care, and may temporarily worsen safety indicators during transition. Freedom from blame, the weakest dimension measured, represents a tractable target for systems with limited capital. A longitudinal design pairing self-reported governance and culture with independently recorded facility-level indicators would establish temporal ordering while breaking the common-method dependency that constrains this study and its predecessor.

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