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ORIGINAL RESEARCH

Assessing Clinical Governance Awareness and Implementation Among Healthcare Professionals in Madinah, Saudi Arabia: A Cross-Sectional Study

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Background: Clinical governance has been developed as a comprehensive approach to enhance the quality of care. As a new methodology, clinical governance is increasingly adopted by Saudi Arabian hospitals.

Objective: This study aims to assess the awareness level of clinical governance among healthcare professionals in King Salman Medical City, Madinah, Saudi Arabia.

Methods: This is a cross-sectional survey study that used a proportionate stratified sampling technique from July to October 2024. Data collection was done using a pre-developed questionnaire involving 65 items, measuring healthcare professionals' awareness of the seven domains of clinical governance. Descriptive analysis was employed using frequencies, means, and standard deviation. Meanwhile, the one-way *t*-test and one-way ANOVA were used in the inferential analysis.

Results: A total of 403 professionals responded to the survey with a response rate of 58%. Quantitative analysis revealed a notably high level of clinical governance implementation across all assessed areas in the hospital. Public and patient involvement stands out as the strongest area, with a mean difference of 0.846 and a t-value of 22.400, while risk management has a relatively lower mean difference of 0.578 with a t-value of 13.549. The descriptive statistics for public and patient involvement reveal slight variations in perceptions of involvement across different staff roles in the hospital. Doctors report the highest mean involvement level at 3.96 (SD = 0.74), with a 95% confidence interval ranging from 3.80 to 4.12. Laboratory specialists have the lowest mean at 3.60, with the largest variability (SD = 1.20), and their confidence interval (2.80 to 4.41) is wider.

Conclusion: The study revealed a strong foundation in patient engagement, audit processes, and data management. Decision-makers need to encourage the culture of risk management and clinical effectiveness. Future researchers might shed light on the impact of clinical governance on patients' outcomes.

Keywords: clinical governance, quality of care, healthcare, patient safety, clinical audit, risk management

Introduction

Literature indicates that even developed countries struggle with ensuring and maintaining the high level of quality of care.[1] Therefore, enhancing the health system performance with limited resources has led healthcare settings to look for new methodologies.[2,3] Among the various approaches to be adopted to improve the quality of health care services, clinical governance (CG) represents one of the latest quality approaches developed to ensure quality and patient safety.[4,5] Clinical governance is considered a core part of healthcare system improvement and reform, integration and coordination of the delivery of quality of care, and positively affecting healthcare system performance.[6–8]

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The concept of clinical governance was first introduced in the United Kingdom (UK) in 1997 as a response to the major deterioration in the rendered quality of care.[9,10] According to Zahir,[11] clinical governance was increasingly used in the late 1990s when the National Health Services (NHS) experienced serious quality-related issues such as increased rates of dying babies after cardiac surgery, failure in cervical smear testing, and poor breast-screening services. Therefore, clinical governance is defined by the NHS as "a system through which NHS organizations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish".[12] Also, it is defined by Wulandari et al[13] as the application of a set of clinical functions to guarantee the provision of high-quality care.

Clinical governance was developed based on the principles of corporate governance.[14] Consequently, the primary objective of clinical governance is to achieve quality in healthcare by integrating all patient-impacting activities into a unified strategy.[9] Various traits and elements have been disclosed by previous studies since the emergence of clinical governance (Table 1).[15–19] Various instruments and methods have been developed to assess the implementation of these clinical governance domains. The Organizational Progress in Clinical Governance (OPCG) measure was created by the University of Birmingham Health Services Management Center to evaluate a set of organizational competencies related to clinical governance.[20]

Different models were found to measure the implementation of clinical governance. However, the majority have common domains. Freeman[16] developed a model that became the most common and widely used to evaluate the clinical governance in healthcare. According to him, this model includes six domains, which are planned and integrated quality improvement, proactive risk management; absence of unjust blame and punishment; working with colleagues; training and development; and organizational learning. According to Baird,[21] seven domains were developed as clinical effectiveness and research, audit, risk management, education and training, patient and public involvement, using information and IT, and staffing and staff management. Nevertheless, the variation between these models provides a wide range of focused area that directly and indirectly enhance the quality of care.

Literature review shows various overall levels of clinical governance awareness and implementation in healthcare, ranging from low to high scores. In fact, these studies vary in the degree of implementing clinical governance domains, which are previously discussed. The study of Mosadeghrad et al[17] reported a moderate implementation of clinical governance principles with high scores for staff education and management compared to low clinical effectiveness practices. While another study revealed high scores in some domains, such as public and patient involvement and risk management, compared to a very low score in clinical audit and staff management.[14]

The discrepancies in the level of implementing clinical governance within or among different healthcare facilities might be because of the different challenges they have. Therefore, such barriers or obstacles need to be taken into consideration for a better outcome. Literature shows numerous challenges such as lack of planning and budget allocated[13], weak leadership commitment and support, insufficient staff, poor monitoring and evaluation, and lack of coordination and cooperation.[4] Where another study highlighted that a lack of organizational culture and formal structure might hinder the successful implementation of clinical governance in healthcare.[22]

Despite the international adoption of the clinical governance approach in both developed and developing countries, no study was found that studied the implementation of clinical governance in Saudi Arabia. The study aims to understand clinical governance awareness and implementation in King Salman bin Abdulaziz Medical City, Madinah. Also, it helps healthcare organizations and policymakers with actionable strategies for better implementation of CG, leading to enhancing the quality of care.

Materials and Methods

Design

A descriptive approach using a cross-sectional design was employed. It targeted healthcare professionals at King Salman bin Abdulaziz Medical City (KSAMC) in Madinah, Saudi Arabia. Based on the HR department, 4550 healthcare professionals are working at KSAMC from different specialties. Accordingly, the required sample size was 384

Table 1 Reliability Statistics

Domain	Number of Items	Cronbach's Alpha
Patient and Public Involvement	13	0.936
Risk Management	8	0.945
Education and Training	9	0.885
Use of Information	8	0.767
Clinical Effectiveness	11	0.917
Clinical Audit	8	0.800
Staff management	8	0.845
Overall	**65**	**0.991**

respondents, as calculated using the following formula: $n = N/1\text{-N}(e)$.[2] The survey achieved a response rate of 58%, calculated as the number of received responses divided by the total number of distributed questionnaires.

Healthcare professionals who were working at the Medical City during the study were included. Meanwhile, interns and trainees, newly recruited staff with less than three months, and healthcare professionals who were working in administrative departments during the study or on scholarship programs were excluded from the study.

The study used both an online and paper-based version of the pre-established questionnaire developed by Parsaamal and Salamzadeh.[23] It consists of two parts; the first part is about the demographic information. While the second part is intended to measure clinical governance awareness and implementation, involving 65 items. Since the research tool was previously valid and reliable, a face validity was conducted on the original questionnaire with minor modifications to the wording to match the Saudi Arabian context.

Reliability Testing

We used Cronbach's alpha to test the internal consistency of the developed questionnaire before conducting the actual survey. The test showed a very good value ranging from 0.767 to 0.945, with an overall score of 0.991 (Table 1).

Data Collection

The data collection phase took around four months (from July to October 2024) after obtaining the IRB approval. The sampling method was structured as follows: first, the estimated sample size was calculated using a proportionate stratified sampling technique for the three hospitals under King Salman bin Abdulaziz Medical City. Then, departments were selected purposefully to ensure involving different categories. Finally, respondents were conveniently selected. Each respondent was given the questionnaire attached with a consent form. Received paper-based questionnaires were immediately checked to ensure no missing data. Completed questionnaires were directly entered into the records.

Statistical Analysis

The study employed the Shapiro–Wilk test to confirm the normality of data. It revealed that Sig = 0.001, which is less than the p-value of 0.05. As a result, there was no evidence of data normality. However, even if the data are not normal, we can still use the statistical tests for normal distribution if the sample size is large enough.[24] Data were analyzed using the Statistical Package for Social Science (SPSS) v.28. Demographic data were analyzed using frequencies, mean, and standard deviation (SD). Meanwhile, the one-sample *T*-test and ANOVA were used for the inferential analysis.

Results

The results in Table 2 indicate that most of the respondents were male (58.6%). The majority were Saudis (85.1%). Age-wise, 57.3% of participants were between 30 and 45 years old, 28.3% were under 30, and the remainder were primarily between 46 and 55 years. Professionally, 20% of participants were doctors, 32% were nurses, and 37% were technicians. Educationally, a large portion held a bachelor's degree (55.6%), followed by those with a diploma (20%) and a master's

Table 2 Sociodemographic Characteristics of Participants (N = 403)

Sociodemographic Characteristics	n	%
Gender		
Male	236	58.6
Female	167	41.4
Nationality		
Saudi	343	85.1
Non-Saudi	60	14.9
Age		
Below 30 years	114	28.3
30 to 45 years	231	57.3
46 to 55 years	53	13.2
Over 55 years	5	1.2
Position		
Doctor	84	20.8
Nurse	129	32.0
Pharmacist	30	7.4
Laboratory Specialist	11	2.7
Technician	149	37.0
Education		
PhD/Doctorate	36	9.0
Master	55	13.7
Bachelor	224	55.7
Diploma	81	20.1
Other	6	1.5
Years of Experience		
Less than one year	48	11.9
1 to 5 years	107	26.6
5 to 10 years	81	20.1
More than 10 years	166	41.3

degree (13%). Regarding work experience, 41% of participants reported over 10 years of experience, 26.6% had between 1 and 5 years, and 20% had 5 to 10 years of experience (see Table 2).

Level of Clinical Governance Practices in Hospital in Comparison of International Mean

The results show how different areas are prioritized. "Public and Patient Involvement" scored the highest with an average of 3.85, indicating that this area receives strong attention. On the other hand, "Risk Management" scored the lowest with 3.58, suggesting it is slightly less emphasized. "Education and Training" and "Use of Information" had moderate scores around 3.6 and 3.7, showing they are well covered. "Clinical Effectiveness" and "Clinical Audit" also had similar scores, reflecting balanced focus in these areas. "Staff Management" scored 3.63 but had the most variation in responses, indicating that opinions might differ more in this area (see Table 3).

The results of the one-sample *t*-test highlight a notably high level of clinical governance implementation across all assessed areas in the hospital. Each area shows a mean significantly above the baseline value of 3, indicating robust attention and focus in clinical governance practices. "Public and Patient Involvement" stands out as the strongest area, with a mean difference of 0.846 and a t-value of 22.400, suggesting that efforts to engage patients and the public are particularly well developed and prioritized. Similarly, "Use of Information" and "Clinical Audit" also exhibit high levels of implementation, with mean differences of 0.710 and 0.656, respectively, indicating that data utilization and audit

Table 3 One-Sample Descriptive Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Public and Patient Involvement	403	3.8460	0.75814	0.03777
Risk Management	403	3.5780	0.85642	0.04266
Education and Training	400	3.6149	0.94327	0.04716
Use of Information	400	3.7102	0.86237	0.04312
Clinical Effectiveness	399	3.5831	0.86319	0.04321
Clinical Audit	402	3.6562	0.82118	0.04096
Staff Management	402	3.6286	1.01054	0.05040

processes are integral components of the hospital's governance framework. "Education and Training", with a mean difference of 0.615 and a t-value of 13.037, also a clear focus on preparing and educating staff, which is essential for sustaining high standards. "Clinical Effectiveness" and "Staff Management" follow closely, with mean differences around 0.6, suggesting consistent attention to these areas. Although "Risk Management" has a relatively lower mean difference of 0.578, it still significantly exceeds the baseline, indicating a meaningful focus on managing risks effectively (see Table 4).

One-Way ANOVA (Clinical Governance and Position)

The descriptive statistics for "Public and Patient Involvement" reveal slight variations in perceptions of involvement across different staff roles in the hospital. Doctors report the highest mean involvement level at 3.96 (SD = 0.74), with a 95% confidence interval ranging from 3.80 to 4.12, indicating a strong sense of engagement in public and patient involvement activities. Pharmacists follow closely with a mean of 3.86 (SD = 0.63), and their confidence interval (3.63 to 4.10) overlaps somewhat with that of doctors, suggesting similar levels of engagement. Nurses and technicians report slightly lower but comparable levels, with mean scores of 3.84 (SD = 0.72) and 3.79 (SD = 0.78), respectively. The confidence intervals for these two roles (3.72 to 3.97 for nurses and 3.67 to 3.93 for technicians) indicate a consistent, moderate level of involvement across these groups. Laboratory specialists have the lowest mean at 3.60, with the largest variability (SD = 1.20), and their confidence interval (2.80 to 4.41) is wider, reflecting more varied responses in this group, possibly due to the smaller sample size (see Table 5).

The descriptive statistics for "Risk Management" indicate some variation in how different staff roles perceive their involvement in this area. Nurses reported the highest mean score at 3.73 (SD = 0.74), with a 95% confidence interval from 3.61 to 3.87, suggesting a relatively strong engagement in risk management activities among this group. Pharmacists also show a high level of engagement, with a mean of 3.68 (SD = 0.60) and a confidence interval of 3.45 to 3.90, indicating consistent perceptions within this role. Laboratory specialists reported a mean of 3.61, but with the widest standard deviation (SD = 1.31) and a broad confidence interval (2.73 to 4.49), indicating more diverse opinions on

Table 4 One-Sample Test Results

	Test Value = 3					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Public and Patient Involvement	22.400	402	0.000	0.84596	0.7717	0.9202
Risk Management	13.549	402	0.000	0.57802	0.4941	0.6619
Education and Training	13.037	399	0.000	0.61489	0.5222	0.7076
Use of Information	16.471	399	0.000	0.71019	0.6254	0.7950
Clinical Effectiveness	13.494	398	0.000	0.58313	0.4982	0.6681
Clinical Audit	16.023	401	0.000	0.65623	0.5757	0.7368
Staff Management	12.472	401	0.000	0.62863	0.5295	0.7277

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Table 5 Descriptives of Public and Patient Involvement

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Public and Patient Involvement	Doctor	84	3.96	0.74	0.08	3.80	4.12
	Nurse	129	3.84	0.72	0.06	3.72	3.97
	Pharmacist	30	3.86	0.63	0.12	3.63	4.10
	Laboratory Specialist	11	3.60	1.20	0.36	2.80	4.41
	Technician	149	3.79	0.78	0.06	3.67	3.93
	Total	403	3.84	0.76	0.04	3.77	3.92

risk management within this smaller group. Doctors and technicians had somewhat lower mean scores at 3.53 (SD = 0.96) and 3.44 (SD = 0.87), respectively. The confidence intervals for doctors (3.33 to 3.74) and technicians (3.30 to 3.58) indicate slightly less consistent perceptions of involvement in risk management activities (see Table 6).

The descriptive statistics for "Education and Training" reveal varying perceptions among different hospital staff roles. Nurses report the highest mean score at 3.81 (SD = 0.83), with a 95% confidence interval ranging from 3.67 to 3.95, indicating strong engagement and satisfaction with education and training initiatives. Pharmacists also demonstrate a relatively high level of engagement, with a mean score of 3.64 (SD = 0.83) and a confidence interval of 3.33 to 3.95, suggesting consistent responses within this group. Doctors, laboratory specialists, and technicians report lower mean scores at 3.50, 3.53, and 3.51, respectively. The confidence intervals for these groups indicate moderate engagement in education and training but with more varied responses. For instance, laboratory specialists have the widest confidence interval (2.71 to 4.34), which could be due to their smaller sample size, leading to more variability in responses (see Table 7).

The descriptive statistics for "Use of Information" reveal that different hospital staff roles perceive their engagement with information use at varying levels. Nurses reported the highest mean score at 3.86 (SD = 0.80), with a 95% confidence interval from 3.72 to 4.00, suggesting that nurses feel particularly engaged in the use of information within their roles. Pharmacists also report a relatively high level of involvement, with a mean of 3.78 (SD = 0.65) and

Table 6 Descriptives of Risk Management

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Risk Management	Doctor	84	3.53	0.96	0.11	3.33	3.74
	Nurse	129	3.73	0.74	0.07	3.61	3.87
	Pharmacist	30	3.68	0.60	0.11	3.45	3.90
	Laboratory Specialist	11	3.61	1.31	0.40	2.73	4.49
	Technician	149	3.44	0.87	0.07	3.30	3.58
	Total	403	3.58	0.86	0.04	3.49	3.66

Table 7 Descriptives of Education and Training

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Education and Training	Doctor	83	3.50	0.97	0.11	3.29	3.72
	Nurse	129	3.81	0.83	0.07	3.67	3.95
	Pharmacist	30	3.64	0.83	0.15	3.33	3.95
	Laboratory Specialist	11	3.53	1.22	0.37	2.71	4.34
	Technician	147	3.51	1.00	0.08	3.35	3.67
	Total	400	3.61	0.94	0.05	3.52	3.71

a confidence interval between 3.53 and 4.02, indicating consistent responses within this group. Doctors and technicians reported slightly lower engagement levels, with mean scores of 3.66 (SD = 0.94) and 3.61 (SD = 0.86), respectively. Their confidence intervals (3.45 to 3.86 for doctors and 3.47 to 3.75 for technicians) reflect a moderate level of involvement. Laboratory specialists reported the lowest mean score at 3.56, with the widest variability (SD = 1.24) and a broad confidence interval of 2.72 to 4.39, suggesting more diverse opinions among this smaller group (see Table 8).

The descriptive statistics for "Clinical Effectiveness" show similar perceptions across some staff roles but with notable differences among others. Both doctors and nurses report the highest levels of engagement in clinical effectiveness, each with a mean of 3.73. For doctors, the standard deviation is 0.83, and the 95% confidence interval ranges from 3.54 to 3.91. For nurses, the standard deviation is slightly lower at 0.80, with a confidence interval between 3.59 and 3.87. This indicates that both groups feel positively engaged with clinical effectiveness measures in the hospital. Pharmacists have a slightly lower mean score of 3.60 (SD = 0.58), with a narrower confidence interval from 3.38 to 3.81, suggesting consistent, though slightly less strong, perceptions of engagement compared to doctors and nurses. Laboratory specialists report a mean of 3.49, with a high variability (SD = 1.30) and a broad confidence interval (2.62 to 4.36), indicating diverse opinions in this smaller group. Technicians reported the lowest mean score of 3.38 (SD = 0.91), with a confidence interval from 3.23 to 3.53, suggesting relatively lower engagement in clinical effectiveness activities (see Table 9).

The results for "Clinical Audit" show generally positive perceptions across different hospital roles, with doctors and nurses having the highest levels of agreement. Both doctors and nurses report similar average scores—3.73 and 3.74, respectively—indicating they feel quite involved in clinical audit activities. The confidence intervals for these groups (3.54 to 3.91 for doctors and 3.61 to 3.87 for nurses) suggest consistent responses within these roles. Pharmacists and laboratory specialists have slightly lower average scores, with pharmacists at 3.59 and laboratory specialists at 3.67. Laboratory specialists show more variability, likely due to the smaller sample size, which is reflected in the wider confidence interval (2.88 to 4.46). Technicians report a mean of 3.56, the lowest among the groups, but still within a positive range, suggesting that while engagement in clinical audits is generally positive, technicians feel slightly less involved compared to doctors and nurses (see Table 10).

Table 8 Descriptives of Use of Information

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Use of Information	Doctor	83	3.66	0.94	0.10	3.45	3.86
	Nurse	129	3.86	0.80	0.07	3.72	4.00
	Pharmacist	30	3.78	0.65	0.12	3.53	4.02
	Laboratory Specialist	11	3.56	1.24	0.37	2.72	4.39
	Technician	147	3.61	0.86	0.07	3.47	3.75
	Total	400	3.71	0.86	0.04	3.63	3.80

Table 9 Descriptives of Clinical Effectiveness

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Clinical Effectiveness	Doctor	83	3.73	0.83	0.09	3.54	3.91
	Nurse	128	3.73	0.80	0.07	3.59	3.87
	Pharmacist	30	3.60	0.58	0.11	3.38	3.81
	Laboratory Specialist	11	3.49	1.30	0.39	2.62	4.36
	Technician	147	3.38	0.91	0.08	3.23	3.53
	Total	399	3.58	0.86	0.04	3.50	3.67

Table 10 Descriptives of Clinical Audit

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Clinical Audit	Doctor	83	3.73	0.83	0.09	3.54	3.91
	Nurse	129	3.74	0.76	0.07	3.61	3.87
	Pharmacist	30	3.59	0.60	0.11	3.36	3.81
	Laboratory Specialist	11	3.67	1.18	0.36	2.88	4.46
	Technician	149	3.56	0.87	0.07	3.41	3.70
	Total	402	3.66	0.82	0.04	3.58	3.74

The results for "Staff Management" reveal some differences in how hospital staff feel about this area. Nurses report the highest average score of 3.78, indicating they generally feel quite positive about staff management practices. Their confidence interval (3.62 to 3.95) shows a consistent view among this group. Doctors also feel positively, with an average score of 3.68, although with slightly more variation in responses, reflected in the confidence interval of 3.46 to 3.91. Pharmacists and technicians have slightly lower average scores at 3.49 and 3.51, respectively. This suggests a moderately positive perception of staff management but perhaps not as strongly as seen among doctors and nurses. Laboratory specialists report the lowest average score of 3.34, with more variability, likely due to their smaller sample size, which is shown in the wide confidence interval from 2.42 to 4.26 (see Table 11).

The ANOVA analysis shows that perceptions of clinical governance practices are generally consistent across different staff positions, with one key exception. For most areas, including "Public and Patient Involvement", "Risk Management", "Education and Training", "Use of Information", "Clinical Audit", and "Staff Management", there are no significant differences in how different roles view these aspects. This indicates that staff, regardless of position, share similar views and experiences related to these practices, reflecting a cohesive approach to clinical governance across the hospital. However, "Clinical Effectiveness" stands out with a significant difference across positions ($p = 0.006$). This suggests that certain roles perceive clinical effectiveness practices differently, which could indicate variations in how these practices are applied or valued by different groups (see Table 12).

Table 11 Descriptives of Staff Management

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Staff Management	Doctor	83	3.68	1.03	0.11	3.46	3.91
	Nurse	129	3.78	0.94	0.08	3.62	3.95
	Pharmacist	30	3.49	0.89	0.16	3.16	3.82
	Laboratory Specialist	11	3.34	1.37	0.41	2.42	4.26
	Technician	149	3.51	1.04	0.09	3.35	3.68
	Total	402	3.63	1.01	0.05	3.53	3.73

Table 12 ANOVA Results of Position and Clinical Governance

		Sum of Squares	df	Mean Square	F	Sig.
Public and Patient Involvement	Between Groups	2.166	4	0.542	0.942	0.440
	Within Groups	228.896	398	0.575		
	Total	231.063	402			
Risk Management	Between Groups	6.426	4	1.606	2.217	0.067
	Within Groups	288.426	398	0.725		
	Total	294.852	402			

(*Continued*)

Table 12 (Continued).

		Sum of Squares	df	Mean Square	F	Sig.
Education and Training	Between Groups	7.659	4	1.915	2.177	0.071
	Within Groups	347.353	395	0.879		
	Total	355.012	399			
Use of Information	Between Groups	4.862	4	1.216	1.645	0.162
	Within Groups	291.867	395	0.739		
	Total	296.730	399			
Clinical Effectiveness	Between Groups	10.568	4	2.642	3.640	**0.006**
	Within Groups	285.979	394	0.726		
	Total	296.547	398			
Clinical Audit	Between Groups	3.009	4	0.752	1.117	0.348
	Within Groups	267.400	397	0.674		
	Total	270.409	401			
Staff Management	Between Groups	6.730	4	1.682	1.658	0.159
	Within Groups	402.768	397	1.015		
	Total	409.498	401			

Note: *The mean difference in bold is significant at the 0.05 level.

Discussion

Clinical governance was developed by the NHS to ensure high quality of care. This study aimed to assess the level of clinical governance awareness and implementation among healthcare professionals at the King Salman bin Abdulaziz Medical City, Madinah, Saudi Arabia. The high level of implementation across the "Public and Patient Involvement" domain shows the KSAMC leadership's commitments to applying such an approach to ensure higher quality of care. Moreover, this strong emphasis is vital for relationship-building purposes and for service improvement. This attention to patient engagement agrees with Staniszewska et al,[25] since active patient engagement ensures that quality care is provided and health systems become more accountable. The study of Braden et al[15] has also highlighted a valuable contribution to patient engagement in healthcare satisfaction and safety. However, this result contradicts the study of Parsaamal and Salamzadeh,[23] which reported a very low implementation score. This might be because of the governmental support from the Kingdom of Saudi Arabia to its hospitals. Nonetheless, there is concern that an over-reliance on patient feedback without proper structuring might make the purpose defeat its effectiveness, as was noted in Kaba and Ozturk[7] when, for example, public hospitals in Turkey had problems consistently enjoining the patient's perspective.

While the "Use of Information" has a relatively high score, this bears witness to the relatively good base in managing and utilizing data for making decisions based on available evidence. The good usage of information reflects the good technical infrastructure that KSAMC has. This practice was also found by Aldossary,[26] who claims that proper management of accurate data increasingly relates to developing better decisions and improving overall clinical effectiveness. Yet, Briner et al[27] note that without adequate support for data interpretation skills among staff, information use may not fully optimize patient outcomes. Some studies revealed different results. According to the study of Parsaamal and Salamzadeh,[23] which revealed an unsatisfactory use of information.

The best performance in "Clinical Audit" also benefits best global practices, since clinical audit is an important component in sustaining and improving healthcare standards. Indeed, a study by Rose and Pang[28] supports this by showing that routine clinical audits ensure that care is provided according to current evidence-based standards, minimizing unwarranted variability in patient outcomes. Freeman and Walshe[20] also established that clinical audits drive continuous improvement by identifying gaps in quality of care. Vassos et al[29] suggest, however, that audits can become too resource-intensive in some environments, and, if not conducted in proper balance, this detracts from other areas of clinical governance. However, the findings of this study dispute the study of Wijedoon and Wichramasinghe,[14] which reported a low practice of the clinical audit.

The "Staff management" domains demonstrate a moderate level of implementation among healthcare professionals at KSAMC. Our results contradict the study of Parsaamal and Salamzadeh,[23] which reported a very low implementation score pertaining to the staff management. According to Braden et al,[15] human capital, especially clinicians and other healthcare providers, needs to be properly managed and motivated. Moreover, they emphasized that poor staff management might lead to a burnout, which negatively affects patient safety and staff health as well. The study of Dehnavieh et al[30] reported that lack of staff management is one of the barriers to the proper implementation of CG. Baird[21] clarifies that staff management relates to the appropriate recruitment, retention, and ensuring good working conditions.

Whilst the moderate scores in "Education and Training" reflect consistent but not exceptional engagement, which, while positive, suggests areas for enhancement. Baloyi and Jarvis[31] emphasize that professional development fosters adherence to evidence-based practices, which aligns with this study's findings. Price and Reichert[32] also argue that continuous education improves job satisfaction and care quality, further supporting the need to bolster this area. However, Mosadeghrad et al[33] found that in Iranian hospitals, training alone was insufficient in advancing clinical governance unless paired with robust support systems, suggesting that the study hospital might need a similar integrated approach.

The lowest mean score was in "Risk Management", indicating an area for improvement. As noted by the Institute of Medicine,[1] effective risk management is foundational for ensuring patient safety. In fact, Briner et al[34] highlighted the importance of comprehensive strategies in managing risks, particularly for the complex healthcare environments. The lower engagement in this domain may reflect constraints similar to those observed by Ziari et al[3,4] in Iran, where lack of resources hindered robust risk management practices. In contrast, Ageiz et al[3,14] in Egypt suggest that even with limited resources, systematic planning can significantly enhance risk management, implying that strategic adjustments could elevate risk management practices without heavy investments.

The significance variance was shown in "Clinical Effectiveness" domain, as indicated by the ANOVA results. This finding raises questions about role-specific implementation strategies. To this effect, doctors and nurses reported higher engagement, consistent with findings from Connell,[35] who observed that clinical effectiveness initiatives are often more accessible to those directly involved in patient care. This contrasts with technicians' and laboratory specialists' perceptions, which may reflect less involvement in decision-making or unclear clinical pathways, as observed in Wijekoon and Wickramasinghe[14] in Sri Lanka. To bridge this gap, targeted engagement strategies could involve more collaborative clinical pathways, as suggested by Ravaghi et al,[36] who found that inclusive practices enhanced staff buy-in across healthcare professionals.

The study has several strengths. The involvement of different specialties enhanced the best understanding of clinical governance awareness and implementation at King Salman bin Abdulaziz Medical City. Furthermore, employing a reliable and valid questionnaire provided a more accurate reflection. While this work encountered a low response rate, which increased the duration of data collection, research team members' efforts, and allocated budget.

Finally, findings demonstrate the current level of implementing CG principles from healthcare professionals' perspectives. They support the healthcare decision-makers with insightful information to well prepare their health strategies and budget allocation. Based on these information, hospital directors and other health facilities can direct their strategic and operational plans effectively and efficiently.

Conclusion

While clinical governance is a new concept and approach adopted in Saudi Arabia, it is crucial to understand to which level healthcare professionals are aware of or implement its principles. By measuring the CG implementation, the study revealed an overall moderate score across the seven CG domains. To enhance clinical governance practices at King Salman bin Abdulaziz Medical City, it is recommended that the hospital focus on strengthening its risk management framework, as this area showed relatively lower engagement. Structured risk assessments, targeted training, and dedicated risk management roles would help mitigate patient safety risks effectively. Additionally, investment in continuous education for all professionals, especially technicians and laboratory specialists, could bridge gaps in clinical effectiveness and foster skill development, aligning with best practices in professional healthcare settings. Given the high engagement in public and patient involvement, expanding structured feedback mechanisms, such as patient panels or community surveys, would further solidify patient collaboration in care decisions. In terms of information use, enhancing

accessibility through user-friendly systems and real-time data updates could empower more data-driven practices across roles, thereby strengthening informed decision-making. Furthermore, expanding the clinical audit process to include a wider range of staff in cross-functional audit teams could foster shared accountability and broaden the ownership of quality initiatives. To improve perceptions of staff management, focused leadership development that emphasizes inclusivity and encourages feedback across different providers would create a supportive, cohesive work culture. Collectively, these recommendations address both high-performing areas and gaps, reinforcing King Salman bin Abdulaziz Medical City's commitment to a patient-centered, high-quality healthcare environment. The results of King Salman in Abdulaziz Medical City's clinical governance practices suggest a strong foundation in patient engagement, audit processes, and data management. However, areas such as risk management and role-specific applications of clinical effectiveness would benefit from further refinement. Leveraging insights from both supporting and contrasting sources, the findings underscore that a well-rounded approach, integrating patient-centered strategies, tailored staff training, and inclusive risk management practices, is essential for comprehensive and effective clinical governance.

Data Sharing Statement

All data generated or analyzed during this study are included in this article, and additional data are available from the corresponding author upon reasonable request.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board (or Ethics Committee) of King Salman bin Abdulaziz Medical City (IRB protocol No: 24-026 and date of approval: 19 May 2024).

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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