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COMPLIANCE WITH CLINICAL DOCUMENTATION PRACTICE AMONG MEDICAL DOCTORS IN NATIONAL REFERRAL HOSPITAL IN NAIROBI CITY COUNTY, KENYA

[*1]Jackline Atieno Agutu, [2]George Ochieng Otieno & [3]Jane Muiruri

[2]Department of Health Management and Informatics, Kenyatta University

***Email of Corresponding Author: agutujackline2@gmail.com.**

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ABSTRACT

Clinical documentation is fundamental to safe and effective patient care, yet global compliance remains below the World Health Organization's recommended 95% standard. In Kenya, compliance stands at 80%, with documented challenges in health information systems contributing to patient mismanagement and medical errors. Limited research has examined clinical documentation compliance among medical doctors in National Referral Hospitals despite their critical role in tertiary healthcare delivery. This study evaluated clinical documentation compliance rates and the influence of sociodemographic characteristics among medical doctors in National Referral Hospitals in Nairobi City County, Kenya. A descriptive analytical cross-sectional study was conducted among 203 medical doctors sampled from three National Referral Hospitals using stratified random sampling. Data were collected using structured questionnaires and the Medical Records Quality Scoring Checklist (MeReQ) to assess compliance across four quality dimensions: completeness, accuracy, legibility, and timeliness. Chi-square tests determined associations between sociodemographic characteristics and compliance at $p \leq 0.05$ significance level. Overall compliance was 67%, substantially below both Kenya's 80% and the international 95% standards. Gender ($\chi^2=8.474$, $p=0.005$) and age ($\chi^2=26.732$, $p=0.001$) demonstrated statistically significant associations with compliance. Female doctors showed higher compliance (88.3%) compared to males (72.3%), while mid-career doctors aged 35-47 years exhibited the lowest compliance (49.1%). Work experience, education level, ICT proficiency, and specialization showed no significant associations with compliance. The study concludes that clinical documentation compliance remains suboptimal in National Referral Hospitals. Gender and age significantly influence documentation adherence, necessitating targeted, age-specific and gender-sensitive interventions alongside comprehensive quality improvement frameworks to achieve international standards.

Keywords: *Compliance, Clinical Documentation Practice, Medical Doctors, National Referral Hospital, Nairobi City County*

BACKGROUND

Clinical documentation plays a vital role in facilitating safe and effective patient care by ensuring that accurate medical information is shared among clinicians, supporting continuity of care and compliance with regulatory standards (Cawthorn, 2025). As a standard operating procedure recommended by the World Health Organization (WHO), it guides medical operations for better patient management, recording comprehensive details about patients from admission to discharge, including assessments, medical interventions, and resources utilized (Jacob et al., 2021). Despite its critical importance, global adherence to clinical documentation standards remains below the expected 95 percent threshold. Alarmingly, more than eighty percent of patients who experience harm are affected mainly by non-compliance with medical documentation standards, followed by poor diagnosis and medication errors (WHO, 2018). Omoit (2021) noted that a large proportion of medical errors results from poor clinical documentation among health workers. This is further substantiated by Auerbach et al. (2024), who discovered that 23% of over 2,400 hospitalized adults who died or were transferred to the ICU had diagnostic errors which caused serious harm or death. Makary and Daniel (2016) emphasize that while automation in healthcare offers immense benefits, without vigilant oversight, robust interoperability, and strong clinician training, automated systems can introduce new risks, potentially contributing to the rising prevalence of medical errors.

Good clinical documentation optimizes patient care by ensuring comprehensive assessment of patient needs, enabling effective communication among care providers, supporting clinical decision-making, and promoting continuity and quality of care (American Health Information Management Association, 2020). Medical records serve as essential communication tools not only among healthcare providers but also with patients and their families (Bunting and de Klerk, 2022). Additionally, they are increasingly important in medico-legal disputes, requiring accuracy, completeness, consistency, and timeliness to substantiate claims even months or years after incidents (Rajagopal, 2023). Furthermore, clinical records provide valuable data for research, auditing, clinical governance, and hospital performance monitoring, with clinical audits directly improving documentation quality and supporting organizational goals (Lynam et al., 2023).

However, several factors influence compliance with clinical documentation practices. Research in Nakuru County, Kenya, investigating electronic medical records (EMR) system adoption revealed that physician perceptions and knowledge significantly affect medical records system compliance,

with doctors typically reluctant to transition from paper to electronic systems (Chebole, 2015). Similarly, Mallawarachchi (2021) found that only 29.46% of doctors in a Sri Lankan hospital were aware of government directives on medical record standards, despite high awareness of specific requirements such as ICD-10 coding protocols. The study concluded that physicians' understanding of clinical documentation requirements was inadequate, with only 7.61% of medical records meeting all standards.

The role of socio-demographic characteristics in documentation compliance has been explored in various contexts. Studies have demonstrated high correlations between health personnel's education, work history, and standard operating procedure (SOP) compliance in service delivery (Rudolph et al., 2017). In addition, Vaithamanithi et al. (2016) identified that a significant proportion of hospital staff members lack adequate documentation experience. These findings suggest that providing necessary skills training across cadres can improve documentation compliance, as major socio-demographic factors influence adherence to medical record SOPs (Rudolph et al., 2017). Mallawarachchi (2021) further emphasized the need for ICT competence training, noting that only about half of doctors demonstrated accurate knowledge of basic health information flow in their facilities.

The implementation of electronic health record systems has introduced both opportunities and challenges. According to Finnegan and Mountford (2025), digital systems have become integral to healthcare delivery, associated with improvements in efficiency, quality of care, and patient outcomes. Mwang'ombe (2021) found that 85% of respondents perceived EMR usefulness due to ease of task accomplishment, 82% believed it saved time, and 80% felt it increased productivity. However, challenges persist, with 42% preferring handwritten notes for effective communication and 56% reporting that incorrect data entry hindered information sharing among colleagues.

Workload emerges as another critical factor affecting documentation quality. Jacob et al. (2021) examined how patient workload impacts electronic medical record documentation quality, noting discrepancies between recommended patient-to-doctor ratios and actual practice. Chaiyachati, Shea, Asch, and DA (2019) found an inverse relationship between workload and documentation compliance, with increases in resident doctor workload resulting in negative effects on documentation quality. Post-call days showed the lowest documentation quality, while pre-call days demonstrated the highest (Ommaya et al., 2018). Factors such as workload, clerical burden,

and time shortage contribute to clinical burnout among medical professionals, further compromising documentation standards.

STATEMENT OF THE PROBLEM

Kenya's level of compliance with global standards on clinical records SOP standing at 80%, which is significantly below the internationally approved standard of 95% (WHO, 2018). A review of the District Health Information System (DHIS2) indicates that failure to comply with SOPs has resulted in mismanagement of patients and rampant medical errors. As such, weak health information systems were indicated as one of the major issue based on the second Kenya Health Sector Strategic and Investment Plan (KHSSP) (MOH, 2017). Within the country, regional variations exist, with studies showing compliance rates as low as 63% at Bungoma Level 4 Hospital, 17% below the national average (MOH, 2018). Despite these documented challenges, limited research has comprehensively assessed compliance levels specifically among medical doctors in National Referral Hospitals. Yet medical doctors constitute a key population of the healthcare professions serving as a critical node in the healthcare system.

The underlying factors contributing to poor compliance with clinical documentation procedures remain unclear, whether related to human elements, organizational factors, or information technology proficiency. To date, comprehensive research examining compliance with clinical documentation practice among medical doctors in National Referral Hospitals has been insufficient, despite these facilities employing substantially larger numbers of physicians compared to lower-level hospitals. In addition, the influence of sociodemographic characteristics on compliance with clinical documentation practice remains poorly understood in the Kenyan context. This study therefore sought to evaluate the clinical documentation compliance practice and to determine how sociodemographic characteristics influenced compliance among medical doctors in National Referral Hospitals in Nairobi City County, Kenya.

METHODOLOGY

This study employed a descriptive analytical cross-sectional design incorporating both quantitative and qualitative approaches to collect data. The study population comprised 560 medical doctors, from which a sample of 233 participants was determined using Yamane's (1967) formula at a 95% confidence level and proportionately allocated across three facilities: Mathari National Teaching

and Referral Hospital (n=56, 24%), Kenyatta National Hospital (n=106, 45%), and Kenyatta University Teaching and Referral Hospital (n=71, 31%). Data was collected from 203 medical doctors representing a response rate of 87%. Stratified random sampling followed by simple random sampling using computer-generated randomization was employed to select participants, ensuring equal representation and minimizing selection bias. Data collection utilized structured self-administered questionnaires to capture sociodemographic characteristics while a Medical Records Quality Scoring Checklist (MeReQ) was employed during tracer studies to assess compliance through key data quality dimensions including legibility, accuracy, timeliness, and completeness of discharge charts. The questionnaire was pre-tested at Moi Teaching and Referral Hospital among 23 medical doctors, yielding a Cronbach's alpha of 0.8, indicating strong internal consistency and reliability. Compliance was assessed using a binary scale (compliant/non-compliant), with participants required to meet all quality dimensions to be classified as compliant. Data analysis was conducted using SPSS version 25 and MS Excel, employing Chi-square and Fisher's exact tests to determine associations between independent and dependent variables at a significance level of $p \leq 0.05$. Ethical approval was obtained from Kenyatta University Ethical Review Committee, National Commission for Science, Technology and Innovation (NACOSTI), and respective hospital authorities, with informed consent secured from all participants prior to data collection.

RESULTS

Female doctors constituted the majority of respondents (n=120, 59.1%), while male doctors comprised 40.9% (n=83) of the sample. In terms of age distribution, the largest proportion of participants fell within the 35-47 years' age bracket (n=106, 52.2%), followed by those aged 25-34 years (n=88, 43.3%), with only a small percentage above 48 years (n=9, 4.4%). This age distribution suggests a relatively youthful medical workforce in the studied facilities.

Regarding work experience, nearly half of the respondents (n=95, 46.8%) had 0-9 years of experience, while those with 10-19 years and 20+ years of experience comprised 28.1% (n=57) and 25.1% (n=51) respectively, indicating a workforce dominated by relatively less experienced doctors. Educational qualifications revealed that the majority of medical doctors held undergraduate degrees (n=157, 77.3%), while postgraduate degree holders represented 22.7% (n=46) of the sample.

Assessment of ICT proficiency showed varied competency levels among the respondents. Advanced ICT proficiency was reported by 42.9% (n=87) of participants, while 31.5% (n=64) possessed basic proficiency and 25.6% (n=52) had intermediate skills. In terms of specialization, specialists constituted the majority (n=138, 68.0%) of the study population, while general doctors comprised 32.0% (n=65), reflecting the tertiary nature of the National Referral Hospitals where specialized care is predominantly provided.

Table 1: Sociodemographic Characteristics of Respondents

	Variable	Frequency	Percent
Gender	Male	83	40.90%
	Female	120	59.10%
Age	25-34 years	88	43.30%
	35-47 years	106	52.20%
	Above 48 years	9	4.40%
Work Experience	0-9 years	95	46.80%
	10-19 years	57	28.10%
	20+ years	51	25.10%
Level of Education	Postgraduate	46	22.70%
	Undergraduate	157	77.30%
ICT Proficiency	Advanced	87	42.90%
	Basic	64	31.50%
	Intermediate	52	25.60%
Area of specialization	General Doctors	65	32.00%
	Specialists	138	68.00%

COMPLIANCE WITH CLINICAL DOCUMENTATION PRACTICE

Overall compliance was measured using the MeReQ checklist in conjunction with four data quality dimensions: legibility, completeness, accuracy, and timeliness. These dimensions were evaluated through systematic document reviews and were corroborated with responses obtained from the questionnaire. The exercise was conducted through a tracer study, using doctors' identification numbers provided by the Human Resources departments of the respective health facilities. The outcome was a binary outcome such that a respondent would either be compliant (0) or non-compliant (1). The result is presented in presented in Table 2.

Table 2: Compliance with Documentation

Data Quality Dimensions	Non-Compliant (%)	Compliant (%)
Completeness		
Front sheet information	69 (34.0)	134 (66.0)
Abbreviation present	72 (36.0)	131 (64.0)
History of complaint	76 (37.4)	127 (62.6)
Past medical history	72 (35.5)	131 (64.5)
Vital signs documented	68 (33.5)	135 (66.5)
Drug administration record	72 (35.5)	131 (64.5)
Discharge summary	75 (37.0)	128 (63.0)
Summary sheet present	61 (30.0)	142 (70.0)
Accuracy		
Timely documentation	73 (36.0)	130 (64.0)
Doctor visit frequency	84 (41.4)	119 (58.6)
Discharge prescription recorded	57 (28.0)	146 (72.0)
Biodata form	70 (35.0)	133 (65.0)
Legibility		
Doctors' annotation signed	66 (33.0)	137 (67.0)
Operative notes signed	77 (38.0)	126 (62.0)
Biodata form	63 (31.0)	140 (69.0)
Timeliness		
Timely documentation	75 (37.0)	128 (63.0)

Evaluation of documentation completeness showed that the summary sheet demonstrated the highest compliance rate at 70.0% (n=142), followed closely by vital signs documentation at 66.5% (n=135) and front sheet information at 66.0% (n=134). Past medical history, drug administration records, and documentation without inappropriate abbreviations each achieved 64.5% (n=131), 64.5% (n=131), and 64.0% (n=131) compliance respectively. However, discharge summaries (63.0%, n=128) and history of complaints (62.6%, n=127) showed relatively lower compliance rates. Non-compliance ranged from 30.0% to 37.4% across completeness indicators, with history of complaints recording the highest non-compliance at 37.4% (n=76).

The accuracy dimension revealed mixed compliance patterns. Discharge prescription recording demonstrated the strongest performance with 72.0% (n=146) compliance, while biodata forms achieved 65.0% (n=133) compliance and timely documentation reached 64.0% (n=130) compliance. However, doctor visit frequency documentation showed the lowest compliance within

this dimension at 58.6% (n=119), with a correspondingly high non-compliance rate of 41.4% (n=84). This suggests challenges in consistently documenting physician rounds and patient encounters.

Assessment of documentation legibility indicated generally favorable compliance levels. Biodata forms demonstrated the highest legibility compliance at 69.0% (n=140), followed by doctors' annotations with signatures at 67.0% (n=137). Operative notes showed the lowest compliance within this dimension at 62.0% (n=126), with 38.0% (n=77) non-compliance, suggesting particular challenges in ensuring proper documentation and signing of surgical procedures. Timeliness assessment revealed that 63.0% (n=128) of documentation was completed in a timely manner, while 37.0% (n=75) showed delays in documentation. This relatively high non-compliance rate in timeliness indicates significant challenges in real-time or near-real-time documentation practices, potentially reflecting workload pressures or documentation workflow issues among medical doctors.

SOCIO-DEMOGRAPHIC CHARACTERISTICS AND COMPLIANCE WITH CLINICAL DOCUMENTATION PRACTICE

A chi-square test of independence was conducted to determine whether there was a significant association between gender, age, level of education, area of specialty, work experience and compliance with clinical documentation and the summary of results is presented in Table 3.

Table 3: Sociodemographic Characteristics and Compliance with Clinical Documentation

	Compliant (%)	Non-Compliant (%)	χ^2 (df)	P Value
Gender				
Female	106(88.3)	14(11.7)	8.474(1)	0.005
Male	60(72.3)	23(27.7)		
Age				
25-34 years	73(83)	15(17)	26.732(2)	0.001
35-47 years	52(49.1)	54(50.9)		
Above 48 years	8(88.9)	1(11.1)		
Work Experience				
0-9 years	49(51.6)	46(48.4)	1.693(2)	0.429
10-19 years	31(54.4)	26(45.6)		
20+ years	32(62.7)	19(37.3)		
Education level				
Postgraduate	31(67.4)	15(32.6)	1.152(1)	0.308
Undergraduate	92(58.6)	41(41.4)		
ICT Proficiency				
Advanced	57(65.5)	30(34.5)	0.177(2)	0.915
Basic	44(68.7)	20(31.3)		
Intermediate	35(67.3)	35(32.7)		
Area of Specialization				
Generalist	36(55.4)	29(44.6)	1.085(1)	0.355
Specialist	87(63)	51(37)		

Gender demonstrated a statistically significant association with compliance to clinical documentation practice (χ^2=8.474, df=1, p=0.005). Female medical doctors exhibited higher compliance rates at 88.3% (n=106) compared to their male counterparts who recorded 72.3% (n=60) compliance. Correspondingly, male doctors showed higher non-compliance at 27.7% (n=23) compared to females at 11.7% (n=14). This significant difference suggests that gender plays an influential role in adherence to clinical documentation standards in the studied hospitals.

A highly significant association was observed between age and compliance with clinical documentation practice (χ^2=26.732, df=2, p=0.001). Interestingly, the youngest age group (25-34 years) demonstrated strong compliance at 83.0% (n=73) with only 17.0% (n=15) non-compliance. The oldest age group (above 48 years) showed the highest compliance rate at 88.9% (n=8), though this group had the smallest sample size (n=9). However, the middle age group (35-47 years) exhibited the lowest compliance at 49.1% (n=52), with a notably high non-compliance rate of 50.9% (n=54). This pattern suggests that mid-career doctors face particular challenges in

maintaining documentation standards, potentially reflecting increased workload or competing responsibilities during this career phase.

Work experience showed no statistically significant association with compliance (χ^2=1.693, df=2, p=0.429). Compliance rates varied across experience levels, with doctors having 0-9 years of experience showing 51.6% (n=49) compliance, those with 10-19 years at 54.4% (n=31), and those with 20+ years at 62.7% (n=32). Despite the observed trend toward higher compliance with increased experience, the differences were not statistically significant, suggesting that work experience alone does not substantially influence documentation compliance in this context. Educational qualification did not show a statistically significant association with compliance (χ^2=1.152, df=1, p=0.308). Postgraduate degree holders demonstrated 67.4% (n=31) compliance compared to 58.6% (n=92) among undergraduate degree holders. While postgraduates showed a trend toward better compliance, the difference was not statistically significant, indicating that higher educational attainment does not necessarily translate to better documentation practices.

ICT proficiency levels showed no statistically significant relationship with compliance (χ^2=0.177, df=2, p=0.915). Compliance rates were relatively similar across all proficiency levels: basic proficiency at 68.7% (n=44), intermediate at 67.3% (n=35), and advanced at 65.5% (n=57). This finding suggests that technical competency in information and communication technology does not substantially influence adherence to clinical documentation standards, contrary to common assumptions about the role of ICT skills in documentation quality. Area of specialization demonstrated no statistically significant association with compliance (χ^2=1.085, df=1, p=0.355). Specialists showed 63.0% (n=87) compliance compared to 55.4% (n=36) among generalist doctors. While specialists exhibited a trend toward higher compliance, the difference was not statistically significant, indicating that the type of medical practice does not substantially determine documentation adherence.

Feedback from the qualitative interviews on the variation in compliance level across different sociodemographic characteristics revealed the following.

"What we have realized as an organization is that young doctors have embraced clinical documentation more than the elderly, maybe because of Genz issue"

"Level of ICT proficiency does not correlate with level of compliance to standard operating procedure of records, it depends on technology one is using in documentation, you can be at basic level but you're still conforming to the standards"

"All doctors are taken through induction process during on boarding, thus are expected to conform with good clinical documentation, doctor's specialty doesn't matter"

DISCUSSION

The current study revealed that the overall compliance with clinical documentation practice among medical doctors at the national referral hospital was 67% which is lower than the Kenyan recommended compliance of 80% MOH (2018) and international recommended of 95% WHO (2018). This finding aligns with findings of Rajbhandari et al, (2021), which discovered that baseline compliance with documentation standards was 68% before intervention. After targeted training and electronic health record optimization, compliance increased to 84%. The current study further found no statistically significant association between all the data quality dimensions and compliance to clinical documentation practices. This aligns with findings of the study done by Li et al. (2019) which found no statistically significant link between these data quality dimensions and projecting performance or incidence heterogeneity. It however contradicts findings of a study by Wurster et al. (2024) which found significant improvements in completeness after EMR adoption.

The study established a strong statistically significant association with gender and compliance with clinical documentation practice among medical doctors in National referral hospitals. This finding is consistent with the most recent study which was conducted by Auerbach et al. (2024) that, female surgeons consistently spent significantly more time about 8 additional minutes per day on clinical documentation outside scheduled hours compared to male counterparts. Although this contradicts a study which was conducted by Omoit (2021), the findings indicate that there was no significance difference between gender and compliance to medical records standard operating procedure.

On age, the Pearson Chi-Square test yielded a statistically significant indicating a strong association between age and clinical documentation compliance. This finding corresponds to a study which was conducted by AF Al Habib et al. (2023) on analysis of EHR documentation

among physicians and found that physician age group was one of the significant predictors of documentation compliance, alongside department and discharge year. Although this study focused primarily on physicians, it indicates that older verses younger clinicians may differ in how well they adhere to documentation standards. However, it contradicts with a recent study conducted by Luna-Aleixos et al (2024) who evaluated completion rates of the Continuity of Care Report (CCR) by hospital nurses before and after an optimization intervention. Despite no changes in completion rates between age groups, they reported a statistically significant increase in report assessment rates by primary care nurses, this suggests age didn't influence documentation compliance.

On the other hand, the relationship between respondents' level of education and their compliance with documentation practices in the National Referral hospitals were also examined. The analysis confirmed the absence of a meaningful association between education level and compliance with clinical documentation. The findings suggested that educational attainment, whether undergraduate or postgraduate, does not significantly influence compliance status in this context. This result aligned with those of a study done by Gampaha District, Sri Lanka (2021) who assessed doctors' compliance with national medical documentation standards based on a rigorous audit of 500 bed head tickets across government hospitals in Gampaha, despite low general compliance. The study did not find education level (e.g. MBBS vs. postgraduate training) to be related with compliance performance awareness and knowledge gaps, rather than formal education achievement which seemed to drive inconsistency. This directly supports the belief that education level isn't linked to how well doctors comply with documentation norms. This however contradicted a cross-sectional survey by Al-Otaibi et al, (2022) who examined predictors of EHR adoption and satisfaction among physicians in Kuwait's public health care and found that education level was a significant predictor. In particular, their study found doctors with higher academic qualifications tended to report greater satisfaction and more frequent use of EHRs.

Moreover, a large portion of medical doctors in the National referral hospital reported having advanced ICT skills, indicating strong digital capability within the group. Although a majority were confident in using digital tools successfully, we still have a segment with introductory skills. There was no statistically significant association between ICT proficiency and compliance with clinical documentation in National Referral hospital, this suggests that the level of ICT proficiency does not significantly influence whether a medical doctor is compliant or non-compliant with

documentation practice. This result contradicted findings of Omoit (2021), whose findings indicated enhancing IT skills among health workers at Bungoma level 4 hospital will more than double the likelihood of adherence to the standard operating procedures for medical records documentation.

The study found no statistically significant association between work experience and Clinical documentation practice among medical doctors in National referral hospitals. This finding aligns with findings of a study done by Mukuna (2025), which acknowledged that among institutional predictors analyzed, work experience was not identified as a significant factor in modeling documentation quality. Only factors like; SOPs, workload, and culture were examined and found non-significant in multivariate regression. The finding however contradicts those of a study done by Bolado et al. (2023) which found out that more experienced nurses are significantly more likely to demonstrate good documentation practice. In addition, analysis was conducted to examine whether a medical doctor's area of specialization is associated with clinical documentation standards. Area of specialization demonstrated no statistically significant association with compliance (χ^2=1.085, df=1, p=0.355). Specialists showed 63.0% (n=87) compliance compared to 55.4% (n=36) among generalist doctors. While specialists exhibited a trend toward higher compliance, the difference was not statistically significant, indicating that the type of medical practice does not substantially determine documentation adherence. This corresponds to findings of a study done by Samaha et al, (2022) that showed no statistically significant association between physician specialty and documentation quality after adjusting for provider and contextual factors; Specialty did not influence overall documentation quality for chronic disease outpatient notes.

CONCLUSION

This study evaluated clinical documentation compliance and the influence of sociodemographic characteristics among medical doctors in National Referral Hospitals in Nairobi City County, Kenya. The findings revealed that overall compliance with clinical documentation practice remained substantially below the internationally recommended standards across all data quality dimensions of completeness, accuracy, legibility, and timeliness. Among the sociodemographic characteristics examined, only gender and age demonstrated statistically significant associations with compliance. Female medical doctors exhibited significantly higher compliance rates compared to their male counterparts, while age emerged as a particularly strong determinant of

documentation adherence, with mid-career doctors showing markedly lower compliance compared to their younger and older colleagues. Contrary to common assumptions, work experience, education level, ICT proficiency, and area of specialization showed no significant associations with compliance, suggesting that technical competency and seniority alone do not guarantee better documentation practices. These findings underscore the need for targeted interventions to improve clinical documentation quality among medical doctors in National Referral Hospitals.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations would bridge the identified gaps;

i. Implement targeted, gender-sensitive and age-specific documentation training programs in National Referral Hospitals to address the documentation challenges faced by male physicians and doctors aged 35-47 years.
ii. Establish a comprehensive clinical documentation quality improvement framework with regular audits and feedback mechanisms to achieve and sustain the internationally recommended 95% compliance standard for enhanced patient safety and quality healthcare delivery.
iii. Further study to investigate whether variables like training level, organizational culture, or digital literacy mediate or moderate the relationship between data quality and clinical documentation compliance.

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