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Original Article

Clinical Audits in Medical Education: Barriers and Opportunities Among Jordanian Medical Students

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Abstract

Background: Clinical audits are crucial for enhancing healthcare quality, but various obstacles can restrict their implementation. This study aims to examine barriers to the implementation of clinical audits among medical students and interns. **Methods:** We conducted a cross-sectional online survey involving 727 clinical-year medical students (4th–6th year) and interns in Jordan from six Jordanian universities between August and November 2023. Participants completed a self-administered online questionnaire covering demographics, knowledge of clinical audits, perspectives on clinical audits, and barriers to conducting them. **Results:** Of the 727 participants (58.2% male; 35.5% in their 6th year), only 7.3% had engaged in clinical audits, despite 69.5% identifying personal development and 64.8% recognizing healthcare improvement as motivations. Key barriers included time constraints (78%), academic pressure (79%), and a lack of institutional support (80%), while 59.2% felt their curriculum left them underprepared. Awareness of audit objectives was limited, with 48.4% disagreeing that they understood audit objectives. Fear of criticism was commonly reported, with 70.7% agreeing or strongly agreeing that this discouraged their participation. Multivariable logistic regression adjusted for university, academic year, GPA, and gender showed that prior research involvement strongly predicted audit knowledge (1–2 projects: aOR = 6.30; 3–4 projects: aOR = 4.92; $p < 0.001$). **Conclusions:** Students expressed positive attitudes toward clinical audits but showed limited knowledge and very low participation. These findings highlight the need for structured, hands-on audit training within undergraduate medical curricula and improved institutional support to facilitate student engagement in quality improvement activities.

Introduction

Clinical audit is a crucial process that systematically measures the effectiveness of healthcare services against established standards to improve quality and outcomes.[1] This process involves evaluating various aspects of patient care, identifying areas for improvement, and implementing changes at the individual, team, or service level. This cyclical approach not only helps identify deficiencies but also fosters a culture of continuous improvement in healthcare practices. Also, it forms a core component of clinical governance and supports constant monitoring of quality and safety in healthcare services.

Clinical audit operates within the broader framework of Clinical Governance, a system through which healthcare organizations continuously improve quality and safeguard high standards by integrating audit with six additional pillars, including risk management and education. The audit cycle ***(Figure 1)*** typically involves setting evidence-based standards, collecting and comparing data against these criteria, implementing changes, and re-auditing to assess whether improvements have been achieved.[2]

patient outcomes, and strengthening health systems overall. LMICs must address data quality and availability issues through investments in data collection systems and by training healthcare providers in audit techniques and quality improvement principles. Overcoming these obstacles unlocks the true potential of clinical audits in LMICs, promoting evidence-based practices and a culture of continuous improvement that ultimately leads to better health outcomes and the success of broader healthcare programs.[4] These system-level limitations also limit medical

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students' opportunities to engage in audit activities, due to limited mentorship, insufficient institutional support, and a lack of structured audit training.

International studies consistently report low levels of formal audit training, limited student participation in audit projects, and uncertainty about audit principles and methods.[5,6] Evaluating medical students' knowledge and attitudes toward clinical audits is crucial. Student involvement in clinical audits is essential in Jordan and similar low- and middle-income countries, where workforce shortages and gaps in quality improvement efforts persist. Early engagement in audit practices can equip future physicians with essential skills to strengthen healthcare delivery and promote a culture of continuous evaluation. Engaging them in audits not only provides valuable research experience but also familiarizes them with the core principles and methods essential for their future roles as specialists and consultants.[7] Identifying the barriers faced by medical students can guide early interventions, enhance their readiness for evidence-based practice, and ultimately improve the quality of patient care. 8. Furthermore, encouraging positive attitudes toward audits can significantly influence future participation. Students involved in audits gain insights into clinical guidelines, develop critical evaluation skills, and understand how audits can improve healthcare delivery.[7] The high satisfaction reported by both students and supervisors highlights the educational value of these audits, ultimately enhancing student confidence and understanding of continuous quality improvement.[9]

Clinical audits have the potential to improve healthcare in resource-limited settings, so integrating audit training into medical education is essential. Sustainable educational frameworks that address leadership, stakeholder engagement, and resource limitations could enhance clinical audit integration within LMIC medical curricula.[10] This study assesses medical students' awareness and comprehension of clinical audit procedures, including their principles, practices, and benefits. It aims to evaluate medical students' attitudes and perspectives toward clinical audits, including their level of involvement, the value of clinical auditing, and any perceived barriers to future use of these techniques. This study, therefore, aimed to assess Jordanian medical students' knowledge, attitudes, and perceived barriers to clinical audits, and to identify predictors of prior audit knowledge and participation.

Methods

Study Design and Population

This cross-sectional study took place in Jordan and involved medical students enrolled in clinical rotations (4th, 5th, and 6th years) and medical interns from six universities: the University of Jordan (JU), Hashemite University (HU), Al-Balqa Applied University (BAU), Jordan University of Science and Technology (JUST), Yarmouk University (YU), and Mutah University (MU). Based on institutional estimates, the six universities collectively include approximately 7,500 clinical-year students; these figures are approximations intended only to provide context for the sampling frame. As participation was voluntary and recruitment was based on convenience sampling, the sample cannot be assumed to be representative of all Jordanian medical students. We employed a convenience sampling approach to recruit participants over four months, from August to November 2023. We invited participants to complete a self-administered questionnaire created online using Google Forms. Participants completed and submitted the questionnaire anonymously and voluntarily. The survey link was distributed through official student WhatsApp groups and learning management systems coordinated by student representatives at each university. Reminder messages were sent periodically throughout the data collection period to improve participation. No incentives were provided. Because the survey was distributed through student platforms without a fixed invited denominator, an exact response rate could not be calculated.

Questionnaire

We collected data using a 37-item Arabic self-administered questionnaire specifically developed for this study. The questionnaire covered sections on participant demographics, clinical audit knowledge, attitudes, perspectives, participation, and perceived barriers. The structure included five main sections: demographics; clinical audit knowledge; attitudes toward clinical audits; perspectives on the value of audits; and barriers to conducting audits. The questionnaire was reviewed by a panel of five experts, including clinicians with experience in clinical audits and faculty members in medical education, who assessed items for relevance, clarity, and content coverage. The validated questionnaire was then used in a pilot test. During this phase, the questionnaire was administered to 30 individuals who were representative of our target population. The focus was to gather feedback on the clarity and comprehensibility of the questions. Based on the feedback, necessary modifications were made, and the questionnaire was revalidated in its final form. These modifications mainly involved rephrasing ambiguous items and simplifying wording to improve clarity. Results from the pilot test were excluded from the final analysis. To ensure data robustness, the questionnaire included both multiple-choice and Likert-scale items, enabling a comprehensive assessment of participant responses. The Likert-scale responses were converted to a 1–5 numeric scale to facilitate calculations of mean and confidence intervals (CI). Participants could withdraw from the study at any time. The final questionnaire included 10 items assessing knowledge, six assessing perspectives, and 10 assessing perceived barriers. These domains were conceptually defined based on education expert review; no exploratory factor analysis was performed because the aim was descriptive rather than scale development.

Reliability Analysis

Internal consistency was assessed for each multi-item scale in the questionnaire using Cronbach's alpha. The reliability coefficients demonstrated excellent internal consistency for the knowledge

scale (α = 0.958), and good internal consistency for both the perspectives scale (α = 0.899) and barriers scale (α = 0.883). The mean (±SD) composite scores were 2.64 ± 0.99 for knowledge, 4.18 ± 0.61 for perspectives, and 4.01 ± 0.61 for barriers, confirming satisfactory internal reliability of all measurement domains.

Ethical Consideration

The Faculty of Medicine's Research Ethics Committee and the Institutional Review Board (IRB) approved the study ethically (approval number: 54/2023). To protect participant confidentiality, all responses were collected anonymously, with no identifying information linked to the data. We anonymized participant information by coding it during storage, transfer, and analysis. We stored all data securely with a passcode and shared it only with authorized research team members.

Sample Size Calculation

With a count of approximately 7500 medical students in the clinical years in Jordanian universities, a sample size of 366 is needed to achieve a 5% margin of error and a 95% confidence level, assuming a null response distribution of 50%. The sample size calculation was performed using Raosoft® (an online sampling calculator)11. Although the achieved sample size exceeds the minimum requirement and allows for precise estimation of proportions within this sample, the use of convenience sampling limits generalizability beyond the responding students.

Statistical Analysis

All collected data were imported into an Excel sheet for sorting, cleaning, and coding. Statistical analyses were performed with Jamovi (version 2.5).[12] Continuous variables were reported as mean ± standard deviation (SD). Categorical variables were reported as frequencies and percentages. For all variables with more than 0.5% missing data, the exact number of patients with missing data was marked in the relevant table. Chi-square tests were used to assess associations between categorical variables (e.g., previous knowledge vs. academic year, university). Statistical significance was considered when p-values <0.05. To identify independent predictors of prior knowledge of clinical audits, a multivariable logistic regression model was constructed. The dependent variable was previous knowledge of clinical audits (yes/no). Predictors included university, academic year, GPA category, gender, and number of prior research projects. Multicollinearity among predictors was assessed using variance inflation factors (VIF) in Jamovi by entering all predictors into a linear regression model. All VIF values were close to 1.0, indicating no concerning multicollinearity. The choice of reference category does not affect model fit; BAU was selected to facilitate the interpretation of odds ratios. Odds ratios (OR) with 95% confidence intervals (CI) were calculated. University was included as a categorical variable to account for institutional differences. Mixed-effects modeling or weighting adjustments were not applied because the small number of clusters (six universities) could lead to instability. Although clustering by university may introduce within-group correlation, mixed-effects modelling was not used because the small number of clusters (six universities) can lead to unstable variance estimates. Instead, the university was included as a fixed categorical predictor in the model. This analytic limitation is acknowledged and further addressed in the discussion. We acknowledge that treating individual Likert-scale items as continuous measures is debated; therefore, full category distributions are presented in the tables to support interpretation, and composite means are reported only for multi-item scales.

Results

Participant Demographics

Most participants were male (58.2%) and in their clinical senior years, particularly 6th year (35.5%). GPA distribution was skewed toward the "Very Good" category, and only 17.7% reported prior knowledge of clinical audits, with 7.3% having previously participated. The majority (92.7%) had never completed a clinical audit project ***(Table 1).***

Participant Experience and Motivations for Clinical Audits

Among the 727 participants, only 17.7% reported prior knowledge of clinical audits, and just 7.3% had participated in a clinical audit project, leaving 92.7% with no experience in audit activities. When asked about motivations for engaging in clinical audits, the leading reasons were personal improvement and skill development (69.5%), improving healthcare outcomes (64.8%), and supporting evidence-based practice (61.2%). Additionally, residency requirements influenced 45.5% of participants, and 58.2% expressed a general research interest.

Table 1. Demographic Characteristics of Participants.

	Overall (N=727)
Age: Mean (SD)	22.7 (1.2)
Gender	
Female	304 (41.8%)
Male	423 (58.2%)
Year	
Intern	134 (18.4%)
6th year	258 (35.5%)
5th Year	216 (29.7%)
4th Year	119 (16.4%)
GPA	
Excellent	95 (13.1%)
Very Good	476 (65.5%)
Good	148 (20.4%)
Satisfactory	8 (1.1%)
Previous Knowledge	129 (17.7%)
Previous Participation	53 (7.3%)
No. of Projects	
0	674 (92.7%)
1-2	33 (4.5%)
3-4	17 (2.3%)
4-5	2 (0.3%)
>5	1 (0.1%)
>5	1 (0.1%)

Legend: SD: Standard Deviation.

Association of Previous Knowledge and Participation with University, Academic Year, and GPA

Significant variability in audit knowledge was observed across universities (P < 0.01). Students at MUT and HU reported the highest levels of knowledge, whereas those at JUST and YU reported the lowest. Knowledge and participation also increased with academic seniority: interns demonstrated the highest levels of both prior knowledge (26.9%) and participation (14.9%), while fourth-year students showed the lowest rates. GPA showed only a borderline association with previous knowledge (P = 0.05). *(Table 2)*.

Figure 1. Audit Cycle.

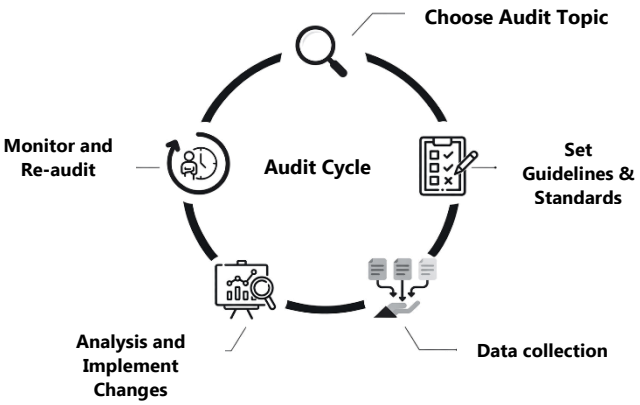

Table 2. Association Between University, Year of Study, and GPA with Previous Knowledge and Participation.

Variable	N	Previous Knowledge: Yes, n (%)	Test Statistic	Previous Participation, n (%)	Test Statistic
University			P < 0.01		P=0.29
JU	128	29 (22.7%)		10 (7.8%)	
HU	152	35 (23.0%)		17 (11.2%)	
BAU	111	22 (19.8%)		5 (4.5%)	
JUST	110	10 (9.1%)		7 (6.4%)	
YU	110	6 (5.5%)		5 (4.5%)	
MU	116	27 (23.3%)		9 (7.8%)	
Year			P = 0.02		P<0.01
Intern	134	36 (26.9%)		20 (14.9%)	
6th Year	258	43 (16.7%)		16 (6.2%)	
5th Year	216	35 (16.2%)		12 (5.6%)	
4th Year	119	15 (12.6%)		5 (4.2%)	
GPA			P = 0.05		P=0.07
Excellent	95	21 (22.1%)		13 (13.7%)	
Very Good	476	71 (14.9%)		29 (6.1%)	
Good	148	35 (23.6%)		10 (6.8%)	
Satisfactory	8	2 (25.0%)		1 (12.5%)	

Legend: Chi-Square Test.

Multivariable Analysis of Predictors of Clinical Audit Knowledge

To identify independent predictors of previous knowledge of clinical audits, a binomial logistic regression model was performed. After adjusting for confounders, university and prior research involvement were the only significant predictors. Compared with students from Al-Balqa Applied University (BAU), those from Jordan University of Science and Technology (JUST) (p = 0.007) and Yarmouk University (YU) (p = 0.001) had significantly lower odds of reporting prior knowledge of clinical audits. Furthermore, students with previous project experience showed markedly higher odds of knowledge, particularly those who had completed 1–2 (aOR = 6.30, p < 0.001) or 3–4 projects (aOR = 4.92, p < 0.001). Academic year, GPA, and gender were not statistically significant predictors.

Knowledge of Clinical Audit

Knowledge scores were generally low across most items, with means ranging from 2.4 to 2.8 on a 1–5 scale, indicating that responses tended to fall between "disagree" and "neutral." The lowest scores were observed for knowledge of different audit types (mean 2.49) and understanding of standard criteria used in audit projects (mean 2.52). The relatively higher—though still below neutral—scores included awareness of evidence-based guidelines (mean 2.77) and confidence in contributing to audits (mean 2.81). Many students reported feeling underprepared by their curriculum, as reflected in the low mean score for curricular preparation (2.44). *(Table 3).*

Perspectives on Clinical Audit

Participants strongly agreed on the value of clinical audits in healthcare. They agreed that audits improve healthcare quality (Mean: 4.13, 95% CI: 4.08–4.18) and patient satisfaction (Mean: 4.08, 95% CI: 4.03–4.14). They also viewed audits as contributing to greater healthcare efficiency (Mean: 4.24, 95% CI: 4.18–4.29) and supporting effective teamwork (Mean: 4.15, 95% CI: 4.09–4.20). Most participants supported the need for clear institutional policies on audits (Mean: 4.28, 95% CI: 4.23–4.34) and believed that clinical audit training should be part of medical education (Mean: 4.19, 95% CI: 4.13–4.25) *(Table 4).*

Barriers to Conducting Clinical Audit

Students reported several substantial barriers to engaging in clinical audits. The most prominent were lack of time (Mean: 4.04) and academic pressure (Mean: 4.01). Perceived shortages in faculty support (Mean: 4.18) and the absence of a dedicated clinical audit department (Mean: 4.17) also scored highly. Psychological safety concerns, including fear of criticism due to student status (Mean: 3.88) and perceived resistance from medical staff (Mean: 3.99), further contributed to hesitancy. *(Table 5).*

Discussion

This study aims to evaluate medical students' level of awareness of clinical audits and to identify the barriers that limit their

participation. While the majority of students expressed a positive attitude toward clinical audits, with many recognizing their role in enhancing healthcare quality and outcomes, actual participation remains low (7.3%). Low knowledge and low participation appeared to coexist; however, the cross-sectional design does not allow determination of whether limited knowledge leads to lower participation or whether both reflect broader curricular and institutional factors.

Clinical audits play a crucial role in promoting the responsibility of healthcare professionals. By serving as a tool for positive change, clinical audits help decrease medical litigation through regular monitoring and adherence to established care standards.[13] However, the effectiveness of clinical audits relies on a comprehensive understanding of the process, including its steps, standards, and objectives.[14] These were areas identified as deficient among medical students in our study.[1314]

The findings of this study align with regional evidence regarding limited clinical audit engagement and understanding among healthcare trainees and professionals. A multi-project clinical audit conducted at Al-Karak Governmental Hospital in Jordan demonstrated improved adherence to clinical guidelines from 34% to 73% following structured audit cycles; however, participation remained primarily limited to residents and junior clinicians.15. In our sample, 17.7% reported prior knowledge, and 7.3% had participated in an audit, consistent with previous Jordanian findings showing limited undergraduate audit exposure.

Table 3. Participants' Knowledge of Clinical Audits.

Knowledge	Mean (95% CI)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Know the objectives of clinical audit	2.76 (2.68–2.85)	99 (13.6%)	253 (34.8%)	168 (23.1%)	135 (18.6%)	72 (9.9%)
Understand the Steps for conducting projects	2.58 (2.50–2.66)	98 (13.5%)	313 (43.1%)	160 (22.0%)	108 (14.9%)	48 (6.6%)
Know the standard criteria used in projects	2.52 (2.43–2.60)	135 (18.6%)	267 (36.7%)	191 (26.3%)	82 (11.3%)	52 (7.2%)
Aware of the role of evidence-based guidelines	2.77 (2.69–2.86)	91 (12.5%)	260 (35.8%)	169 (23.2%)	136 (18.7%)	71 (9.8%)
Know the role of data analysis	2.69 (2.60–2.77)	108 (14.9%)	255 (35.1%)	183 (25.2%)	117 (16.1%)	64 (8.8%)
Know the different types of clinical audits and can differentiate between them	2.49 (2.41–2.57)	127 (17.5%)	302 (41.5%)	161 (22.1%)	88 (12.1%)	49 (6.7%)
Know the benefits of participating	2.77 (2.69–2.86)	100 (13.8%)	237 (32.6%)	181 (24.9%)	146 (20.1%)	63 (8.7%)
Feel confident to contribute	2.81 (2.72–2.90)	100 (13.8%)	229 (31.5%)	191 (26.3%)	122 (16.8%)	85 (11.7%)
The curriculum at my university adequately prepares me	2.44 (2.36–2.53)	157 (21.6%)	273 (37.6%)	170 (23.4%)	71 (9.8%)	56 (7.7%)
Learned how to conduct clinical audit projects from an external source	2.53 (2.45–2.62)	146 (20.1%)	269 (37.0%)	155 (21.3%)	92 (12.7%)	65 (8.9%)

Legend: CI: Confidence Interval.

Table 4. Participants' Views on the Impact and Necessity of Clinical Audits.

Perspective	Mean (95% CI)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Improves the quality of healthcare	4.13 (4.08–4.18)	4 (0.6%)	10 (1.4%)	84 (11.6%)	420 (57.8%)	209 (28.7%)
Increases patient satisfaction	4.08 (4.03–4.14)	4 (0.6%)	10 (1.4%)	103 (14.2%)	414 (56.9%)	196 (27.0%)
Increases the efficiency and quality of healthcare	4.24 (4.18–4.29)	3 (0.4%)	9 (1.2%)	86 (11.8%)	343 (47.2%)	286 (39.3%)
Develops teamwork concept	4.15 (4.09–4.20)	4 (0.6%)	14 (1.9%)	111 (15.3%)	341 (46.9%)	257 (35.4%)
Hospitals should have a clear policy regarding clinical audit	4.28 (4.23–4.34)	4 (0.6%)	6 (0.8%)	85 (11.7%)	316 (43.5%)	316 (43.5%)
Should be a part of medical education	4.19 (4.13–4.25)	6 (0.8%)	12 (1.7%)	97 (13.3%)	335 (46.1%)	277 (38.1%)

Legend: CI: Confidence Interval

Table 5. Barriers to conducting clinical audits.

Barrier	Mean (95% CI)	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Lack of time	4.04 (3.98–4.11)	6 (0.8%)	30 (4.1%)	124 (17.1%)	333 (45.8%)	234 (32.2%)
Academic pressure	4.01 (3.95–4.07)	6 (0.8%)	27 (3.7%)	122 (16.8%)	371 (51.0%)	201 (27.6%)
Difficulty of the clinical audit	3.86 (3.79–3.93)	6 (0.8%)	44 (6.1%)	212 (29.2%)	249 (34.3%)	216 (29.7%)
Lack of support from teachers	4.18 (4.12–4.24)	4 (0.6%)	14 (1.9%)	126 (17.3%)	288 (39.6%)	295 (40.6%)
Lack of support and assistance from colleagues	3.98 (3.91–4.04)	7 (1.0%)	27 (3.7%)	170 (23.4%)	295 (40.6%)	228 (31.4%)
Absence of a clinical audit department	4.17 (4.11–4.23)	5 (0.7%)	10 (1.4%)	125 (17.2%)	305 (42.0%)	282 (38.8%)
Difficulty accessing patient information	3.85 (3.77–3.92)	17 (2.3%)	60 (8.3%)	164 (22.6%)	263 (36.2%)	223 (30.7%)
Avoiding expressing opinions	3.92 (3.85–3.99)	14 (1.9%)	42 (5.8%)	161 (22.1%)	279 (38.4%)	231 (31.8%)
Resistance of the medical staff to any criticism or change	3.99 (3.92–4.05)	6 (0.8%)	26 (3.6%)	166 (22.8%)	303 (41.7%)	226 (31.1%)
Fear of criticism, as I am still a student	3.88 (3.80–3.96)	32 (4.4%)	44 (6.1%)	137 (18.8%)	280 (38.5%)	234 (32.2%)

Legend: CI: Confidence Interval

Conclusions

Jordanian medical students demonstrate positive attitudes and moderate awareness of clinical audits; however, their participation remains low and may be influenced by factors such as limited institutional support, inadequate curricular preparation, academic workload, and fear of criticism. Structural and educational changes are essential to bridge the gap between positive perceptions and practical engagement. Incorporating mandatory, hands-on clinical audit experiences, supervised by experienced clinicians, and establishing dedicated clinical audit departments could promote a culture of continuous quality improvement, ultimately empowering future healthcare professionals to utilize clinical audits effectively and enhance patient outcomes. These findings may help inform ongoing curricular discussions and institutional planning efforts in Jordan.

Summary – Accelerating Translation

Title

Clinical Audits in Medical Education: Barriers and Opportunities Among Jordanian Medical Students

Main Problem

Clinical audits are an important tool for improving the quality and safety of healthcare. They help healthcare teams compare current practice with agreed standards and make improvements where needed. Despite their importance, medical students often have limited exposure to clinical audits during their training, especially in low- and middle-income countries. In Jordan, little is known about how well medical students understand clinical audits, how often they participate in them, and what barriers prevent their involvement.

Aim of the Study

The aim of this study was to assess Jordanian medical students' and interns' knowledge of clinical audits, their attitudes toward audit activities, their level of participation, and the barriers that limit their engagement. The study also aimed to identify factors associated with prior knowledge of clinical audits.

Methodology

We conducted a national cross-sectional online survey between August and November 2023. The survey included 727 clinical-year medical students (4th–6th year) and medical interns from six Jordanian universities. Participants completed a structured, anonymous questionnaire that assessed demographics, knowledge of clinical audits, perspectives on their value, previous participation, and perceived barriers. Data were analyzed using descriptive statistics and multivariable logistic regression to identify independent predictors of audit knowledge.

Results

Most students recognized the importance of clinical audits and agreed that they improve healthcare quality, efficiency, and patient outcomes. However, actual participation was very low, with only 7.3% reporting previous involvement in a clinical audit. Knowledge of audit principles and processes was generally limited, with many students reporting inadequate curricular preparation. The most commonly reported barriers were lack of time, academic pressure, insufficient institutional and faculty support, and fear of criticism. Students with prior research experience were significantly more likely to report knowledge of clinical audits. University affiliation was also associated with differences in audit knowledge.

Conclusion

Although Jordanian medical students show positive attitudes toward clinical audits, their limited knowledge and very low participation highlight important gaps in undergraduate medical education. Addressing these gaps requires structured, hands-on audit training, supportive mentorship,

and institutional support that reduces time pressure and promotes psychological safety. These findings may help inform curriculum development and educational planning in Jordan and similar settings, with the goal of preparing future physicians to actively participate in quality improvement initiatives.

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