JOURNAL OF HEALTHCARE SCIENCES

Volume 5 Issue 12 2025, Article ID: JOHS2025001125

http://dx.doi.org/10.52533/JOHS.2025.51233

e-ISSN: 1658-8967

Review

Feedback on Medical Education Status in KSA: How to Give Effective Feedback During Residency Clinical Training – A Review Article

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Received: 01 December 2025, Accepted: 30 December 2025, Published: 31 December 2025

Abstract

Feedback is crucial in resident clinical training, as future physicians require guidance from medical educators to advance their careers. In medical education, feedback refers to the information provided by instructors that outlines a trainee's performance in a specific activity, aiming to enhance their future performance in similar activities. There is limited research on feedback in the Kingdom of Saudi Arabia (KSA). This review aims to summarize the existing literature on feedback in KSA and to highlight useful articles that outline effective feedback methods in residency clinical training. It also provides suggestions for future research on feedback in Saudi Arabia. We reviewed approximately eleven Saudi articles and twenty-two international articles from the past 20 years using Google Scholar, PubMed, and ResearchGate databases. In conclusion, few studies on feedback have been conducted in Saudi Arabia; however, some have assessed residents' needs, perceptions, experiences, and satisfaction regarding feedback. Other studies have examined medical students' willingness to engage with feedback, as well as discussing the feedback process and its barriers. Consequently, we need to tailor feedback to meet the needs of our trainees, emphasizing the necessity for further research to explore feedback barriers and solutions, deliver effective feedback in clinical training, and teach residents how to become lifelong learners.

Keywords: Feedback, medical education, residents, clinical training, Saudi Arabia

Introduction

Feedback is essential in resident clinical training, as aspiring physicians depend on guidance from medical educators to progress in their careers. In the context of medical education, feedback refers to the information provided by an instructor that assesses a trainee's performance in a specific activity to direct their future performance on similar tasks (1). The feedback process is divided into two categories: formative and summative feedback. Formative feedback encompasses ongoing assessments of the learner by the trainer to help them meet educational objectives and improve their performance. Conversely, summative feedback relates to the final evaluation of a learner's performance at the end of instruction, such as during an end-of-year exam (2). Various assessment tools are utilized for both types of feedback throughout the training process (3).

Feedback is crucial because it reinforces remarkable performance and addresses poor performance (4). In the context of competency-based medical education, feedback must focus on learner objectives and foster a shared understanding of competencies and expectations (5). Research indicates that detailed and continuous feedback on performance is essential in outcome- and competency-based medical education. This method helps close the gap between actual and desired performance while also teaching new ideas to adults who have already learned them. (5) Additionally, it enhances learners' self-awareness and fosters lifelong learning (6); it also improves clinical skills and professional development (5). A significant finding was the heightened satisfaction associated with the effective utilization of residents' feedback during regular assessments. An intentional and reflective approach to feedback frequently results in substantial developmental progress throughout the training program. This method also assists trainers in recognizing their educational requirements so they can attain proficiency during the residency (7–9).

The main barrier to effective feedback performance is that faculty members identified a busy schedule, lack of office time, high student capacity, and insufficient assistance in their roles. The increasing advocacy for students, along with teachers' recognition of the importance of feedback in medical practice and education, was considered an opportunity for enhancing feedback mechanisms (10). However, the expertise of mentors significantly impacts the learning capacity and outcomes of medical students. When instructors are unaware of their proficiency levels, it becomes challenging to develop skills and encourage constructive dialogues to enhance knowledge transfer for clinical students. This lack of awareness hinders their ability to provide effective feedback and appropriate responses that benefit students. Clinicians must be capable of delivering impactful feedback that facilitates student progress. The lack of role models for effective feedback provision has led to inconsistencies in clinical practice (10). Specifically, the learner values feedback if it comes from credible persons and from multiple sources (5).

This article reviews the existing literature on feedback in medical education within the Kingdom of Saudi Arabia (KSA). It identifies current gaps and outlines future needs. Additionally, it focuses on feedback in residency clinical training and evaluates the literature to highlight best practices for effective feedback delivery methods, models, and barriers in postgraduate training in clinical settings, aiming to promote feedback-friendly environments.

Methodology

Since April 2024, we reviewed approximately 11 Saudi articles and 22 international articles published over the last 20 years, utilizing the Google Scholar, PubMed, and ResearchGate databases. The keywords we employed included "feedback in medical education Saudi," "feedback residents in medical education Saudi," "feedback in clinical training," and "feedback residents in medical education." All Saudi research related to feedback was included, while only international research focused on feedback in clinical training was considered.

http://dx.doi.org/10.52533/JOHS.2025.51233

Discussion

National perspectives on feedback in medical education

In Saudi Arabia, researchers have conducted several studies on the role of feedback in medical education. These studies can be categorized into two groups: those focused on medical students and those focused on graduate trainees. Specifically, articles on feedback for graduate trainees indicated that emergency medicine residents found feedback from multiple-choice question (MCQ) mock exams beneficial, especially when using a modified teaching approach. Additionally, their satisfaction was linked to the incorporation of feedback in various educational activities, such as structured oral exams (SOE) (11). Another research study on trainees' satisfaction with the quality of residency training programs in the Saudi Commission for Health Specialties (SCFHS) highlighted residents' desire for timely and constructive feedback during clinical supervision (12).

Additionally, significant research assessed the orthopedic residency program across the kingdom by evaluating residents' need for change. It was found that 80% of residents reported a lack of feedback by the end of their rotations, despite its importance in enhancing performance (13). Separate research conducted in Jeddah in 2012 examined Saudi internal medicine residents' perceptions of the Objective Structured Clinical Examination (OSCE) as a formative assessment tool. This research revealed a positive attitude towards the feedback received after each clinical station, as residents believed that feedback improves clinical skills and performance while guiding their study processes. In conclusion, the research recommended incorporating OSCE feedback into the residency program curriculum (14). Lastly, a study conducted in Saudi Arabia in 2020 in the Qassim region found that between 73% and 83% of trainees reported satisfaction with supervision and feedback (8). Additionally, there is an increase in satisfaction among family medicine residents in Riyadh due to their reflections on clinical competencies (9).

The available Saudi literature on feedback for undergraduate medical students is limited, although it provides a more in-depth discussion compared to the research conducted on graduate trainees. Research on the experience of providing effective feedback to medical students at Taiba University indicates that a significant number of teaching staff are offering feedback. However, several key factors hinder the delivery of appropriate feedback. These include a lack of time, fear of being perceived as judgmental, insufficient self-confidence, inadequate skills, and the absence of student advisership activation. These factors are the primary predictors of the lack of feedback among the population studied (15). Research from Qassim University indicated that medical students are open to receiving effective feedback; however, there is a perceived cultural barrier that could be addressed through proper orientation (16).

Additionally, four studies conducted at King Saud University, including one that examined the appropriateness of problem-based learning (PBL) in medical education and students' perspectives, revealed that undergraduates, particularly females, are also willing to receive effective feedback. However, the lack of skill among trainers in delivering feedback and students' fear of insulting them emerged as a significant barrier (17). Furthermore, 2014 research at King Saud University explored undergraduate medical trainees' perceptions of the quality of feedback received during clinical rotations. The findings indicated that the feedback was often inadequate and unhelpful for developing clinical skills, suggesting that there is an urgent need for a supportive feedback environment and training for trainers on effective feedback techniques (18). Another study examined the feedback process and discovered that senior students seek feedback that aligns with their competencies. It also noted that most students prefer receiving feedback in private or written formats (19).

In summary, previous studies conducted in Saudi Arabia have highlighted the importance of assessing the needs, perceptions, experiences, and satisfaction levels of medical residents regarding feedback

http://dx.doi.org/10.52533/JOHS.2025.51233

(Table 1). Moreover, these articles have examined medical students' willingness to receive feedback and their perceptions of it, addressing the feedback process and identifying barriers associated with it.

Table 1: Feedback in medical education in the Kingdom of Saudi Arabia

Authors	Type of study	Year of publication	Participants number	Area of study	Conclusion
Babkair et al. (11)	An exploratory qualitative design	2023	567 trainees	Jeddah	Emergency medicine residents reported a positive experience and satisfaction with the feedback received after multiple-choice questions (MCQ) and structured oral exam mock tests.
Housawi et al. (12)	Survey	2020	3696 trainees	Jeddah	Residents pursue timely and constructive feedback during clinical training.
Alzahrani et al. (13)	Electronic questionnaire surveys	2018	74 orthopedic residents	Saudi Arabia	Orthopedic residents lack feedback at the end of the rotation.
Alaidarous et al. (14)	Cross-sectional study	2012	66 internal medicine residents	Jeddah	The study recommended incorporating feedback on OSCE in the residency program curriculum.
Rabbani et al. (8)	Survey	2020	60 senior family medicine residents	Qassim	The majority of residents expressed satisfaction with the supervision and feedback they received.
Al-Saab et al. (9)	Cross-sectional study	2020	80 family medicine residents	Riyadh	Increase the satisfaction of family medicine residents regarding their reflections on clinical competence.
Zolaly M A (15)	Cross-sectional study	2019	95 faculty staff in Taibah University	Al Madinah Munawara	A significant number of teaching staff at the studied college provided feedback to students. Time constraints, judgmental attitudes, a lack of self-confidence, inadequate skills, and failure to activate students' advisership were the most important predictor factors for withholding feedback among the studied subjects.
Alribish. (16)	Cross-sectional, questionnaire-based study	2018	299 medical students	Riyadh	Medical students are willing to receive effective feedback, despite the presence of cultural barriers.
AlHaqwi et al. (17)	Cross-sectional, questionnaire-based study	2015	174 medical students	Qassim	Undergraduate female students demonstrated a willingness to receive effective feedback. However, the most common barrier was the unskillful trainer in providing feedback and the student's fear of insult.
Al-mously et al. (18)	Prospective observational study with a cross-sectional design	2014	110 medical students	Riyadh	Students perceived that the feedback during medical rotations was of poor quality.
AlHaqwi et al. (19)	Cross-sectional questionnaire-based study	2012	186 medical students	Qassim	Senior students need feedback focused on their competencies and, preferably, private or written feedback.

http://dx.doi.org/10.52533/JOHS.2025.51233

International perspectives on feedback in clinical training

Providing feedback on clinical skills

Providing feedback on clinical skills is essential, particularly during the residency period, as it significantly contributes to residents' development. Unfortunately, trainees often receive feedback from trainers who have limited or no experience in this area of training. Qualified personnel must deliver feedback systematically to foster the development of technical skills. Furthermore, the challenge of providing feedback during busy daily routines can be addressed by fostering a feedback-friendly culture and offering feedback in small, manageable increments (20) within a supportive environment (21). An important aspect of beneficial feedback exchange is the timing of delivery. Ideally, the session should be a dialogue between the student and the teacher, rather than a one-sided lecture. Feedback given soon following an observed performance may be the most effective. Given the learner's abilities and clinical circumstance, the instructor must weigh the risks and benefits of providing instant vs. delayed feedback. Teaching clinical procedures frequently requires rapid feedback, especially when patient safety is at stake. In that instance, the student should be redirected to protect the patient from harm, but in a way that avoids humiliating the learner in front of others (22).

In clinic training

Research conducted in primary health care indicates that feedback is most effective when residents and instructors collaborate and engage with one another (22). It was found that the one-minute preceptor and SNAPPS (Summarize history and findings; Narrow differentials; Analyze differentials; Probe preceptor about uncertainties; Plan management; Select case-related issues for self-study) are evidence-based strategies utilized in clinical training, while other models have limited support in postgraduate clinical education (23). The one-minute preceptor model, also known as the five-step “micro-skills” model, is effective for micro-feedback interactions in fast-paced clinical settings. This model offers a structured approach for delivering instruction and feedback in patient care. The process begins with the educator obtaining the learner's commitment to a specific component, such as the diagnosis or treatment plan. The educator gathers supporting evidence, evaluates the learner’s reasoning, provides instruction on general principles as needed, and concludes with a succinct discussion that highlights strengths while addressing mistakes. The instant feedback model enhances the development of clinical reasoning and decision-making skills, emphasizing individual learning. The educator should have a sufficient level of expertise in feedback delivery, concentrating on particular aspects while offering balanced guidance and promoting the learner's capacity for reflection and self-assessment (1).

Additionally, the One-Minute Preceptor (OMP) and SNAPPS have been extensively studied in outpatient settings. These educational models offer opportunities for hospitalist educators to enhance trainee assessment, incorporate regular feedback, and promote self-directed learning. Moreover, SNAPPS improves residents' clinical reasoning in inpatient settings (24).

Moreover, cultural factors, values, expectations, relationships, and personal histories influence the feedback process, as detailed in a study on feedback guidelines in clinical settings. This social interaction is a dialogue that the learner considers credible, which is necessary for influencing their development. Credible feedback should come from a reliable trainer who provides clear observations of the resident's skills at an appropriate time. Furthermore, the trainer should serve as a role model and encourage learners to seek feedback (6).

The feedback content should be tailored to the individual trainee; however, trainers generally need to affirm what the trainee has done well, enhance self-awareness, and pinpoint areas needing improvement (6). Trainers in clinical environments must recognize that different trainees require different approaches. Additionally, trainees need specific and well-informed feedback that addresses their performance, along with follow-up regarding their progress. Furthermore, trainers should not

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underestimate the emotional impact of perceived negative feedback, as it may hinder improvement. Furthermore, learners should be adequately informed about strategies for improvement, especially if they are receiving low grades (6). Trainers aim to support trainees who are struggling by encouraging them to develop relational skills, competency, and independence. Our approach involves fostering connections, guiding trainees in understanding and evaluating their feedback, and creating a safe environment for open discussion. This method enables trainees to recognize and enhance their progress in the clinical setting (25).

R2C2

The R2C2 (Relationship, Reaction, Content, Coaching) model is a reflective framework designed to provide assessment feedback. It comprises four phases: first building a relationship, second exploring reactions to feedback, third ensuring comprehension of feedback content, and fourth coaching for performance improvement (26). The R2C2 model is an evidence-based approach for assessing feedback among postgraduate trainees. It emphasizes two-way conversations about data assessment, sharing experiences, and coaching, which requires a long-term relationship between both parties (27). This model is frequently utilized by education leaders, such as program directors, to regularly discuss written assessment reports during residents' meetings to track progress. Moreover, the model applies to both formal and informal assessments (26).

Peer-to-peer feedback

Peer feedback serves as a student's self-assessment during teamwork aimed at achieving a common goal, such as problem-based learning (PBL) (28). American research indicated that it is beneficial during residency programs and can be utilized as an assessment method. Many residents consider peer-to-peer feedback to be informative and reliable; however, they often lack formal training in providing feedback. Furthermore, there can be negative repercussions for work relationships (29). Also, students think that providing feedback to their peers helps them learn more, strengthens their skills, and become more professional. Giving students feedback from their peers can help them feel very responsible (4).

Characteristics of effective feedback

The characteristics of effective feedback include fostering a safe environment by using a non-judgmental tone and incorporating feedback into the regular training process. It is essential to inform learners about competency requirements to enhance their understanding of learning goals. Effective feedback should focus on trainee behavior rather than on the student's personality, provide specific feedback that is targeted to learning objectives, and ideally be delivered after a clinical encounter (3). Furthermore, this approach encourages trainees to self-assess their skills through self-reflection, enabling them to generate their own feedback and promoting lifelong learning, particularly for students in higher education (30).

How to encourage feedback in postgraduate medical education?

Institutes, trainers, and learners should collaborate to foster a feedback-friendly culture. Learners should be educated on feedback theory and methods to differentiate between formal feedback and assessment, as well as to enhance their feedback-seeking behaviors (6). Additionally, trainers must understand how to manage learners' emotions and provide feedback that builds learners' confidence in receiving it effectively. Moreover, teachers should not only provide feedback to one another but also observe learners directly and develop long-term relationships with them to track their progress. Furthermore, the institute should promote feedback practices and encourage their application in clinical settings, curricula, and teaching (31).

Barriers to effective feedback

Cultural barriers to effective feedback include unclear feedback expectations, cultural politeness that prevents honest evaluation, unidirectional feedback, and trainer-trainee relationships that impact the reliability of feedback (32). Recent research in Iran shows residents receive insufficient feedback because they don't seek it, fear negative

http://dx.doi.org/10.52533/JOHS.2025.51233

evaluations, and have short training periods that limit trainer assessment and feedback time (33). Negative feedback could be considered a barrier, as it causes resident distress. Furthermore, a resident with a fixed mindset may prioritize the appearance of a satisfactory performance over anything that might be perceived as a deficiency or a mistake. The "fixed" learner may consider negative feedback as a defeat rather than a tool to strengthen their skills (1).

Although a comprehensive search was performed by using Google Scholar, PubMed, and ResearchGate databases, the search was limited to only English-language studies, and some pertinent articles may have been missed. Also, the presence of a single review could lead to limited reproducibility and make research depend on one author's perspective and point of view during the selection and analysis stage.

Further prospectives are essential to address the research gap concerning feedback in the Kingdom of Saudi Arabia, including barriers that hinder effective feedback, strategies to overcome these obstacles, and the knowledge, attitudes, and practices related to feedback within different training programs. Additionally, we need to develop effective feedback models that cater to both graduate and undergraduate learners. Furthermore, future qualitative and systematic review studies are needed to address the gap.

Conclusion

Feedback plays a crucial role in resident clinical training by enhancing self-awareness among learners and fostering a commitment to lifelong learning. It is also essential for improving clinical skills and supporting professional development. This review focuses on feedback in the context of Saudi Arabia, highlighting the requirements, perceptions, experiences, and satisfaction of medical residents related to feedback. Additionally, it investigates medical students' willingness to receive feedback and their perspectives on the feedback process, including the challenges they encounter.

Furthermore, the paper outlines various methods for delivering feedback to residents regarding their clinical skills and emphasizes different feedback models, such as the one-minute preceptor model and SNAPPS. The goal of these models is to help residents improve their clinical reasoning in real-life situations and self-directed learning. Educational leaders often utilize the R2C2 model to evaluate written assessment reports during residents' meetings and monitor their progress.

The article also explores the characteristics of the feedback process, identifies obstacles to effective feedback, and discusses strategies trainers can use to support trainees. Additionally, it discusses the advantages of peer-to-peer feedback during residency training. Finally, the paper proposes strategies for cultivating a feedback-friendly culture within educational institutions. In conclusion, it emphasizes the importance of ensuring that future physicians receive proper training, promoting lifelong learning among both trainers and trainees, and encouraging educators to engage in research related to medical education.

Disclosure

Conflict of interest

There is no conflict of interest.

Funding

No funding.

Ethical consideration

Non applicable.

Data availability

All data is available within the manuscript.

Author contribution

All authors contributed to conceptualizing, data drafting, collection and final writing of the manuscript.

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