Innovations in Pedagogy and Technology
https://journals.niepublish.com/ipt

REVIEW

Self-Reflection as an Educational Strategy in Postgraduate Medical Training in Saudi Arabia: A Scoping Review

Badriah Alruwaili * , ***Rola Alrabah***

Department of Emergency Medicine, King Abdullah bin Abdulaziz University Hospital, Princess Nourah bint Abdulrahman University, Riyadh 11564, Saudi Arabia

ABSTRACT

Reflective practice is recognized internationally as a core component of professional competence in postgraduate medical education, supporting critical thinking, clinical reasoning, and professional identity formation. In Saudi Arabia, residency programs regulated by the Saudi Commission for Health Specialties (SCFHS) have begun integrating reflective strategies into competency-based curricula; however, implementation remains variable and insufficiently evidenced. This review was done to systematically map how reflective practice is currently defined, implemented, and supported in postgraduate medical education within the Saudi context, and to identify opportunities and barriers influencing broader adoption. It included the empirical and descriptive literature examining the use of reflective strategies among postgraduate medical trainees and faculty in Saudi Arabia, including perspectives, curricular activities, and educational outcomes. A scoping review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guideline. Evidence was identified through database searches and review of SCFHS curricular materials. Descriptive synthesis was used to map approaches, barriers, and implications. A total of 12 sources were included. It showed that the reflective practices are currently embedded implicitly within debriefing, portfolios, simulation-based learning, mentorship, and professionalism initiatives; however, the lack of structured expectations, faculty development, assessment criteria, and psychological safety hinders consistent engagement. Cultural norms and workload pressure further restrict reflection. It concluded that refection is conceptually acknowledged within Saudi postgraduate

*CORRESPONDING AUTHOR:
Badriah Alruwaili, Department of Emergency Medicine, King Abdullah bin Abdulaziz University Hospital, Princess Nourah bint Abdulrahman University, Riyadh 11564, Saudi Arabia; Email: bfalruwaili@kaauh.edu.sa

ARTICLE INFO
Received: 19 November 2025 | Revised: 8 March 2026 | Accepted: 16 March 2026 | Published Online: 23 March 2026
DOI: https://doi.org/10.63385/ipt.v2i2.408

CITATION
Alruwaili, B., Alrabah, R., 2026. Self-Reflection as an Educational Strategy in Postgraduate Medical Training in Saudi Arabia: A Scoping Review. Innovations in Pedagogy and Technology. 2(2): 151–165. DOI: https://doi.org/10.63385/ipt.v2i2.408

COPYRIGHT
Copyright © 2026 by the author(s). Published by Nature and Information Engineering Publishing Sdn. Bhd. This is an open access article under the Creative Commons Attribution 4.0 International (CC BY 4.0) License (https://creativecommons.org/licenses/by/4.0).

medical education but remains underutilized. SCFHS is well positioned to strengthen national implementation through clearer expectations, supported faculty facilitation, and integration into existing assessment frameworks. Further research on reflective outcomes in the Saudi context is needed to guide best practices.

Keywords: Reflective Practice; Self-Reflection; Postgraduate Medical Education; Residency Training; Professional Identity; Saudi Arabia; SCFHS

1. Introduction

Postgraduate medical education represents a formative and intensely developmental period during which physicians progressively acquire the competencies required for independent, safe, and effective patient care[1]. This training phase is marked by continuous exposure to complex clinical environments, unpredictable patient presentations, and decision-making under uncertainty conditions that demand sophisticated clinical reasoning, adaptability, emotional regulation, and sound professional judgment[2]. Within this demanding learning landscape, self-reflection stands out as one of the essential mechanisms through which experiential encounters are transformed into lasting learning, performance enhancement, and deeper professional identity formation[3–5]. Reflective practice enables physicians to critically analyze their clinical decisions, identify cognitive biases and reasoning gaps, and translate day-to-day experiences into improved future performance[6].

Extensive literature has demonstrated that reflective processes contribute to a range of meaningful educational and clinical outcomes. These include improved diagnostic accuracy[6], enhanced patient safety practices, strengthened ethical decision-making, and the development of mature professional identity and well-being among trainees[7]. Reflection also increases resilience by helping trainees contextualize challenges, manage stress, and develop coping strategies for the emotional intensity of clinical work[7]. In this way, reflective practice serves not only as a cognitive tool for learning but also as an essential component of professionalism and psychological well-being in postgraduate training[8].

1.1. Conceptual Foundations of Reflective Practice

The theoretical foundations of modern reflective practice originate from the seminal contributions of educational theorists who explored how professionals learn through action and experience. Donald Schön's concepts of reflection-in-action and reflection-on-action describe how clinicians engage in immediate sense-making during clinical encounters and later analyze their decisions retrospectively to refine future performance[4]. Kolb's experiential learning cycle further situates reflection as the central process that transforms concrete experience into conceptual understanding, enabling learners to iteratively modify skills and behaviors through repeated application[3].

Mezirow's transformative learning theory expands on this by emphasizing the role of critical reflection, a deeper form of inquiry that challenges underlying assumptions, frames of reference, and habitual ways of thinking, ultimately fostering the development of new professional identities and perspectives[5]. Together, these theories form a comprehensive framework that has shaped contemporary reflective practice models across health-profession education. Their collective insights highlight that reflection is not merely introspection but a structured, analytical, and transformative learning process fundamental to expertise development.

1.2. Reflection as a Global Competency

Across international postgraduate education systems, reflective capacity is widely recognized as a core professional expectation for physicians. The Accreditation Council for Graduate Medical Education (ACGME) explicitly incorporates reflection within the Practice-Based Learning and Improvement (PBLI) competency, requiring residents to analyze their performance, integrate feedback, and apply continuous quality improvement principles[1, 9].

Similarly, the Canadian Medical Education Directives for Specialists (CanMEDS) Physician Competency Framework embeds reflective learning within both the Scholar and Professional roles, emphasizing its importance in lifelong learning, ethical decision-making, and professional

self-regulation[10, 11]. The UK General Medical Council (GMC) goes further by mandating reflective practice as a requirement for professional revalidation, explicitly linking reflection with patient safety, accountability, and high-quality care[12].

Across these systems, reflection is presented not as an optional academic exercise but as a fundamental competency supporting ongoing professional growth, clinical safety, and adaptability in rapidly evolving healthcare environments.

1.3. Reflection in the Saudi Arabian Context

Within Saudi Arabia, postgraduate training overseen by the Saudi Commission for Health Specialties (SCFHS) has undergone substantial modernization in alignment with national Vision 2030 workforce development priorities[13]. SCFHS competency frameworks and specialty curricula—often grounded in Saudi Medical Education Directives (SaudiMEDs) principles—highlight lifelong learning, professionalism, and reflective capacity as essential attributes of competent clinicians[14].

Reflection tends to appear more as a broad expectation rather than a structured, assessed, or systematically supported component of the curriculum in Saudi residency training programs. This suggests a developmental phase where reflective practice is acknowledged but not yet fully integrated or consistently taught across specialties.

1.4. Reflective Practice Opportunities in Saudi Postgraduate Medical Education

Saudi residency programs incorporate numerous educational activities that naturally lend themselves to reflective practice, even when not formally labeled as such. These include simulation-based education, structured post-simulation debriefing, electronic portfolios, morbidity and mortality (M&M) meetings, workplace-based assessments (WPBAs), and longitudinal feedback discussions[14].

Each of these activities inherently supports reflection-on-action by prompting learners to analyze performance, clinical reasoning, technical skills, and communication strategies. Nonetheless, despite the presence of these reflective opportunities, the consistency and depth of reflective facilitation vary widely. Many sessions lack guided reflective questioning or written reflection components, reducing their ability to produce sustained learning or measurable reflective growth. As a result, the potential of these learning modalities remains underutilized, and reflective development often occurs informally or inconsistently[15].

1.5. Barriers to Reflection in Saudi Postgraduate Medical Education (PGME)

Several contextual barriers appear to influence the uptake and depth of reflective engagement in Saudi training environments. Studies of patient safety culture in Saudi hospitals describe a prevailing fear of blame and punitive responses to error reporting, suggesting that healthcare professionals may be reluctant to disclose mistakes or vulnerabilities openly[16–18]. Similar challenges are reflected in medical education studies, where portfolios and reflective tools are relatively new, variably implemented, and often underused without adequate faculty guidance and support[19–21]. In such contexts, hierarchical structures and concerns about negative evaluations may indirectly constrain residents' willingness to engage in honest, in-depth reflection on their performance.

When reflection is not assessed or integrated within formal evaluation systems, residents may perceive it as a minor activity, resulting in superficial or compliance-driven participation[21].

1.6. Review Aim

Despite growing emphasis on professionalism and lifelong learning across SCFHS frameworks, the structured integration of reflective practice into Saudi postgraduate medical education has not been comprehensively examined. Therefore, this scoping review aims to map current evidence, analyze contextual facilitators and barriers, and identify strategies aligned with SCFHS objectives to strengthen reflective learning processes and outcomes.

2. Methods

This scoping review was conducted in accordance with the PRISMA-ScR[22]. The purpose of this review was to map existing published and gray literature addressing self-reflection in Saudi postgraduate medical education and to identify contextual barriers and practical opportunities for structured implementation.

2.1. Protocol and Registration

A protocol defining the objectives, inclusion criteria, and data extraction methods was developed prior to the search process to enhance transparency and methodological rigor. The protocol was not prospectively registered due to the exploratory nature of the project and the relative scarcity of Saudi-focused reflective research.

2.2. Rationale for Scoping Methodology

A scoping review methodology was selected because:

- The literature on reflective practice in Saudi postgraduate education is limited, conceptually heterogeneous, and emergent
- Empirical studies are limited and highly diverse in design
- A broad mapping approach enables synthesis of policy documents, conceptual reports, and preliminary empirical evidence
- The goal was not to evaluate intervention effects but to clarify scope, identify gaps, and guide educational policy and faculty development

This approach supports SCFHS stakeholders in planning targeted research and practical implementation.

2.3. Eligibility Criteria

2.3.1. Inclusion Criteria

Sources of evidence were eligible if they:

- Addressed self-reflection or reflective practice in a medical education context
- Focused on postgraduate, residency, internship, or SCFHS-accredited training programs
- Were conducted in Saudi Arabia or included explicit Saudi data or policies
- Were published in English from January 2015 through October 2025
- Were peer-reviewed articles or official governmental or SCFHS educational documents

2.3.2. Exclusion Criteria

Evidence was excluded if it was:

- Non-medical or undergraduate-only
- Opinion-based without educational relevance
- Conducted outside Saudi Arabia without Saudi-specific data
- Not accessible in full text

These criteria ensured a focused synthesis relevant to Saudi PGME implementation.

2.4. Information Sources

The following databases were systematically searched:

- PubMed;
- MEDLINE (via Ovid);
- ERIC (Education Resources Information Center);
- Google Scholar.

Grey literature sources included official SCFHS training curricula, competency frameworks (e.g., SaudiMEDs), and national guidance documents were also searched.

2.5. Search Strategy

A trained health education researcher constructed a search strategy using Boolean operators. The primary search string was:

("self-reflection" OR "reflective practice" OR "reflective learning" OR "reflective writing")
AND
("postgraduate medical education" OR "residency" OR "graduate medical education" OR "health professions education")
AND
("Saudi" OR "Saudi Arabia")

Search Coverage Dates

January 1, 2015–October 31, 2025

2.6. Selection Process

The selection process followed a two-stage screening approach:

Stage 1—Title and Abstract Screening

- Duplicates removed

- Two independent reviewers screened all results
- Articles clearly unrelated to medical education or not reflective were excluded

Stage 2—Full Text Review

- Remaining sources reviewed in depth
- Eligibility confirmed through consensus discussion

Because the Saudi evidence base is small, no automation tools were used. No disagreements required third-party arbitration.

2.7. Data Charting Process

A standardized data extraction sheet was developed (**Table 1**).

2.8. Synthesis of Results

A thematic narrative synthesis approach was used due to heterogeneity of designs.

Themes were deductively mapped to:

1. Implementation practices;
2. Curricular inclusion;
3. Barriers to optimal engagement.

No meta-analysis or quality scoring was applied because:

- Most sources were descriptive, policy-based, or exploratory.
- The intention was scope clarification, not outcome comparison.

Table 1. Data Extraction Sheet.

Author(s), Year	Study Design	Setting/ Specialty	Participants	Reflective Strategy Examined	Outcome	Reported Barriers
Alotaibi et al. (2022) [21]	Cross-sectional questionnaire study	Dermatology residency program, Saudi Arabia	Dermatology residents (R1–R4)	Structured reflective logbook	• Improved residents' awareness of reflective learning. • Increased recognition of learning gaps. • Positive perception of logbook usefulness for professional development.	• Time burden of documenting reflections. • Variability in supervisor feedback.
Khoja (2025) [23]	Exploratory qualitative case study	Saudi clinical training environments (multi-specialty)	Physicians and clinical educators	reflective dialogue and feedback discussions	• Reflection occurs informally but lacks structural support. • Cultural norms and hierarchical dynamics limit open expression of uncertainty. • Faculty vary widely in reflective facilitation skills. • Psychological safety strongly influences reflection depth.	• Power distance and fear of judgment. • Heavy workload limiting reflective time. • Lack of formal reflective frameworks.

Note: Data were charted manually due to the small sample size.

2.9. PRISMA-ScR Flow Diagram

A flow diagram was developed summarizing:

- Records identified;
- Records screened;
- Full texts reviewed;
- Sources of evidence included.

2.10. Methodological Reflexivity

Researchers acknowledged:

- Potential occupational bias favoring reflective practice.
- The necessity of including policy documents to reflect practice reality.
- The risk of publication bias minimizing unsuccessful reflective interventions.

Reflexive notes were maintained to support transparency in interpretation.

3. Results

After removing duplicates, a total of 164 records were identified across all sources, including 204 records from database searches and 10 items of grey literature (**Figure 1**). Title and abstract screening excluded 31 records (e.g., undergraduate focus, non-Saudi context, non-medical), leaving 33 full-text articles for eligibility assessment. Ultimately, 12 sources (**Table 2**) met all inclusion criteria and were included in the final synthesis.

The literature search yielded very limited Saudi-specific evidence on the structured use of self-reflection within postgraduate medical education. Only two empirical studies were identified in the local context, and no published

research evaluated the direct educational impact of reflective practice across residency programs. As a result, this review incorporated evidence from educational strategies known to embed reflection indirectly, such as simulation-based training, structured debriefing, learning portfolios, and workplace-based assessments to explore the current indirect utilization of reflective practice within Saudi postgraduate training.

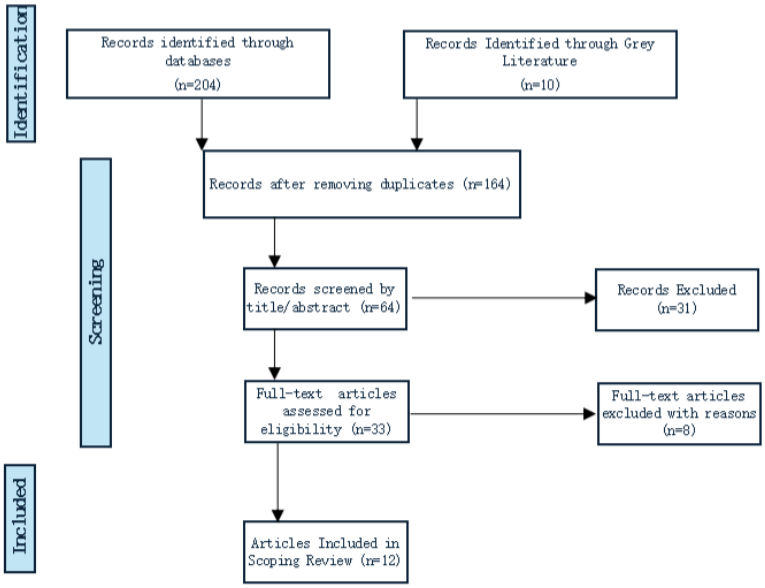


Figure 1. PRISMA-ScR flow diagram illustrating the study selection process for the scoping review [22].

Table 2. Saudi & Contextualized Evidence Characteristics (n = 12).

Evidence Type	Count	Examples	Relevance
Saudi Empirical Studies	2	Dermatology reflective logbook (Alotaibi et al, 2022) [21] Reflective practice within the medical setting in Saudi Arabia (Khoja, 2025) [23]	Demonstrates current pilot practices
SCFHS Competency Documents	10	SaudiMEDs; curricula across specialties	Conceptual mention of reflection

3.1. Characteristics of the Evidence Base

Research into reflective practice in Saudi Arabia has emerged primarily within the past decade, with a noticeable rise in publications occurring since 2022. This temporal trend likely reflects broader national shifts toward competency-based education and alignment with international accreditation standards.

Most empirical studies relied on self-reported perceptions to explore residents' comfort with reflection, perceived value, and the learning benefits associated with reflective activities [21]. This suggests that many specialties are in an exploratory or developmental phase, testing reflective initiatives and gathering feedback rather than evaluating measurable educational or clinical outcomes [23]. Perception-based studies provide valuable insight into acceptability and readiness but often lack objective assessments of impact, highlighting the need for more rigorous and outcome-based research.

Among specialties, dermatology has produced the most direct and structured evidence related to reflection. One study evaluated the use of reflective logbooks or portfolios, reporting favorable resident engagement and meaningful improvement in awareness of learning gaps, procedural challenges, and patient communication issues [21]. These findings illustrate how formalized reflective tools can support clinical reasoning and shape professional development when implemented consistently.

Review of SCFHS curricula showed that reflection is conceptually acknowledged, typically under domains of

professionalism, lifelong learning, and personal development[14]. However, many curricula do not specify how reflection should be taught, facilitated, documented, or assessed, resulting in considerable variability in implementation across training centers. This suggests that while SCFHS sets broad expectations, programs interpret and operationalize reflection differently, contributing to the inconsistent reflective culture observed in practice[24].

3.2. Reflective Practices Currently Embedded in Saudi Post-Grad Training Programs

Analysis of included sources revealed that a wide array of reflective activities is already embedded within Saudi residency programs, even if not uniformly labeled or structured as reflective practice. These activities can be categorized into several domains:

3.2.1. Logbooks and Electronic Portfolios

These represent the most explicit mechanisms for structured reflection. Residents document clinical encounters, procedures performed, challenges faced, and personal learning needs. Dermatology programs have demonstrated how reflective logbooks can deepen residents' understanding of their progress and guide targeted skill development[21]. When portfolios include prompts encouraging analysis rather than description, they enhance reflective depth and foster metacognitive awareness[25].

3.2.2. Simulation-Based Training and Debriefing

Simulation is widely utilized across Saudi PGME[26], and debriefing sessions provide fertile ground for reflection-on-action. In well-facilitated debriefings, residents discuss decision-making processes, identify cognitive biases, analyze teamwork behaviors, and explore emotional responses. Programs that adopt structured debriefing frameworks such as advocacy-inquiry tend to report stronger reflective engagement and more consistent learning outcomes[27, 28].

3.2.3. Professionalism and Ethics Curricula

Professionalism/ethics curricula and communication-skills workshops are part of many postgraduate/residency programs, including in Saudi Arabia, and that these often include case discussions, ethical dilemmas[29], and communication training that have the potential to involve reflective components that invite residents to examine personal values, professional boundaries, and patient-centered care principles. Although not always formally documented, these sessions encourage introspection and perspective-taking, which are core elements of reflective practice.

3.2.4. Case Reviews and Morbidity & Mortality (M&M) Meetings

Morbidity and Mortality (M&M) conferences represent one of the most established reflective learning activities in Saudi postgraduate medical education. SCFHS curricula across multiple specialties mandate M&M as a core component supporting clinical reasoning, patient safety, and professional accountability[30]. M&M conferences may encourage residents to analyze errors, examine decision-making patterns, and engage in reflection-on-action. However, the structure and facilitation of M&M remain variable, influenced by institutional culture, faculty expertise, and levels of psychological safety.

3.2.5. Feedback Discussions and Workplace-Based Assessments

Supervisor–resident interactions, including mini-Clinical Evaluation Exercise (mini-CEX), Direct Observation Of Procedural Skills (DOPS), and other workplace-based assessments, often trigger reflective thinking when linked to constructive feedback. Residents may be required to comment on their performance, identify areas for improvement, and plan follow-up learning actions. When facilitated with empathy and clarity, these discussions support reflection and learning integration.

Despite the presence of these reflective opportunities, the degree to which they are intentional, structured, and consistently applied varies. Many activities lack guiding questions, written components, or mechanisms for assessing reflective depth. As a result, their potential impact is diluted, and reflective learning often remains superficial or fragmented[31].

3.2.6. Specialty-Specific Patterns

As the evidence spanned a diverse range of clinical disciplines, the synthesis revealed that reflective practices manifest differently across specialties, shaped by each field's clinical demands, educational structures, and supervisory cultures. To more accurately capture these variations, the findings were reviewed through a specialty-specific lens.

This approach allowed the identification of distinct patterns, shared challenges, and unique contextual influences that would not have been visible through a generic analysis. The following subsection therefore outlines how reflective opportunities, practices, and barriers differ across major specialty clusters within Saudi postgraduate medical education.

- **Emergency Medicine:** Reflection is most visible in simulation and critical event debriefings, though emotional and cognitive reflection is less emphasized than technical review.
- **Family Medicine & Internal Medicine:** Portfolios and case-based reflections predominate but suffer from limited supervisor engagement and inconsistent structure.
- **Dermatology:** The most structured use of reflective logbooks, with some evidence of improved insight and self-directed learning.
- **Pediatrics & Obstetrics and Gynecology (OB-GYN):** Residents frequently encounter emotionally complex cases; however, reflective spaces to process these experiences remain informal.
- **Psychiatry**: Has the strongest natural alignment with reflective thinking but still lacks formal reflective frameworks in many programs.
- **Diagnostic & Support Specialties (Radiology, Pathology, Laboratory Medicine):** Reflection is mostly informal, related to interpretation errors or case discrepancies and rarely documented.

Overall, reflective opportunities exist across the training continuum, but their quality, structure, and educational value vary substantially.

3.3. Barriers to Optimal Reflective Engagement

Substantial barriers hinder the consistent and meaningful integration of reflective practice within Saudi postgraduate training programs. These barriers appear across cultural, educational, and institutional dimensions (**Table 3**).

3.3.1. Cultural Barriers

In Saudi hospitals, a documented 'blame culture' and punitive response to error disclosure have been shown to discourage staff from admitting mistakes or uncertainty, which may inhibit open reflection and honest discussion of clinical errors[16]. Saudi trainees often practice in the same environments were admitting uncertainty or discussing errors may be interpreted as weakness or incompetence. This cultural expectation can inhibit open reflection and discourage residents from sharing authentic insights.

3.3.2. Hierarchical Medical Structures

Traditional hierarchical relationships between residents and supervisors can limit psychological safety. Trainees may fear negative evaluation, which discourages them from expressing doubts, emotional reactions, or mistakes which are critical elements for deep reflection[19].

3.3.3. Heavy Workload and Service Burden

In a survey of Saudi medical and surgical residents, about half reported working 60–79 h/week and nearly one-third working 80+ h/week, with a high prevalence of burnout a workload profile likely to restrict time for non-clinical activities[32]. This suggests that residents may view reflective writing or self-assessment as optional rather than priority, given competing clinical demands. Without protected time or structured opportunities, reflection becomes an optional task with low prioritization.

3.3.4. Limited Faculty Expertise in Reflection

Many faculty members report lacking experience or training in reflective facilitation[23]. Without skilled guidance, reflection may default to superficial commentary or judgmental feedback, undermining its potential.

3.3.5. Assessment and Evaluation Challenges

When reflection is not integrated into formal assessment structures or is evaluated superficially, residents may perceive it as a low-value requirement. Compliance-driven participation leads to minimal depth and limited educational benefit[15].

3.3.6. Institutional Variability

Available data from Saudi postgraduate training suggest substantial variation in resident perceptions of training quality across different regions and centers[33]. These findings raise the possibility that differences in program culture, faculty engagement, and resource availability may underpin inconsistent reflective experiences across training centers, although direct empirical studies explicitly mapping these factors remain lacking.

Table 3. Potential Barriers to Reflection in Saudi Postgraduate Training Programs.

Potential Barrier	Explanation	Evidence Base/Rationale
Limited Exposure	Minimal formal reflection.	• Regional curriculum norms. • Supported by national literature.
Cultural Discomfort	Avoidance of discussing uncertainty or emotion.	• Observed patterns in health care culture. • Supported by national literature.
Lack of Faculty Preparation	Limited training in reflective facilitation.	Supported by global and national literature.
Time/Workload Constraints	High clinical demands limit reflective time.	Known across residency systems.
Lack of Clear SCFHS Guidelines	Reflection not well structured or assessed.	Document analysis.

3.4. International Findings Relevant to the Saudi Context

Although the number of Saudi-based studies remains limited, reflective practice is extensively documented in international literature from the United Kingdom, Canada, the United States, and Australia. These systems offer insights into practical models and institutional structures that could support reflective practice within the Saudi context.

- **United Kingdom (National Health Service—NHS, GMC)**

In the United Kingdom, reflection is embedded within the Foundation Program and is a mandatory component of the Annual Review of Competency Progression (ARCP). GMC guidance emphasizes that reflection supports patient safety, ethical reasoning, professional development, and well-being[12]. Studies evaluating implementation among UK foundation trainees show that structured reflective writing promotes deeper learning and greater awareness of cognitive errors, particularly when supported by supervisor feedback[34]. These findings demonstrate how reflective processes can strengthen early clinical reasoning, an area of need in Saudi postgraduate training.

- **Canada (CanMEDS Framework)**

Reflection is central to both the Scholar and Professional CanMEDS roles. Although not stand-alone competency, reflection is embedded within continuous learning, self-assessment, quality improvement, and professional accountability[10]. Canadian residency programs frequently use e-portfolios, competence-by-design (CBD) milestones, and structured coaching sessions to institutionalize reflection. These practices align well with SCFHS goals for outcome-based training.

- **United States (ACGME)**

Reflective practice is embedded in the Practice-Based Learning and Improvement (PBLI) and Professionalism competencies[1]. Programs emphasize reflection on evaluations, quality improvement projects, and emotional experiences. U.S. studies show that reflective practice supports resilience, interpersonal skill development, and professional identity formation[35].

- **Australia (Australia Medical Council (AMC) and Specialist Colleges)**

Australian programs incorporate reflection into clinical teaching visits (CTVs), supervisor meetings, and professionalism assessments[36]. Literature from Australia highlights innovative approaches, such as the use of arts and humanities to deepen reflective capacity, emotional awareness, and empathy[37].

Together, these international systems provide clear evidence that reflection can be systematically integrated into postgraduate training through structured tools, faculty development, and supportive assessment frameworks. They offer a blueprint for SCFHS to advance reflective practice within the Saudi educational landscape.

3.5. Implications for Saudi Arabia

Comparing the Saudi and international contexts reveals that challenges encountered in Saudi PGME, such as workload burdens, hierarchical structures, and limited faculty training are not unique. However, international systems offer well-established pathways to address these issues through:

- Clear curricular expectations;
- Structured reflective tools (e.g., templates, portfolios);
- Faculty development programs;
- Proper assessment models;
- Protected time for reflection;
- Cultural emphasis on learning from error.

Saudi PGME can benefit significantly from tailoring these practices to local needs, enabling programs to implement reflection systematically rather than sporadically. Strengthening reflective practice aligns closely with SCFHS's long-term goals of developing competent, ethical, and adaptable professionals capable of contributing to the Vision 2030 healthcare transformation agenda.

3.6. Evidence Gaps and Research Needs

Despite promising developments, several important gaps remain in the Saudi evidence base:

3.6.1. Lack of Studies Evaluating Direct Clinical Outcomes

No included studies assessed how reflection influences patient outcomes, error reduction, or clinical decision-making quality which are key targets of reflective practice.

3.6.2. Limited Research on Residency Progression and Competency Milestones

There is a scarcity of longitudinal evidence linking reflection to progression decisions, competency attainment, or performance evaluations.

3.6.3. Few Studies Examining Reflective Depth or Quality

Most studies focus on learner perceptions rather than analyzing the quality or depth of written or verbal reflections.

3.6.4. Minimal Faculty-Focused Research

Supervisors play a critical role in shaping reflective culture, yet few studies explore faculty experiences, training needs, or facilitation skills.

3.6.5. Lack of Culturally Contextualized Reflective Tools

Research is needed to identify how reflective practices can be optimized for cultural norms, linguistic preferences, and local healthcare structures.

Overall, reflective practice in Saudi PGME remains an underdeveloped but highly promising area. Targeted national and institutional strategies are necessary to strengthen infrastructure, support faculty, and embed reflective learning within competency-based frameworks.

4. Discussion

This scoping review represents the first comprehensive synthesis of reflective practice within Saudi postgraduate medical education which demonstrates that although reflective practice is increasingly acknowledged within Saudi postgraduate medical education, its implementation remains conceptually endorsed but operationally underdeveloped. The findings reveal that reflective practice is referenced across SCFHS curricula, predominantly under domains related to professionalism, lifelong learning, and personal development. However, these references often lack detailed guidance on implementation, structured pedagogical strategies, or standardized mechanisms for assessment. As a result, reflection tends to remain an implicit expectation rather than an explicit, consistently practiced educational activity.

The review highlights that residents across several specialties express a positive disposition toward reflective learning when it is intentionally included within educational activities. Structured initiatives such as reflective logbooks in dermatology programs and simulation-based debriefing sessions demonstrate that residents derive clear value from reflective processes when properly facilitated[21]. These positive perceptions align with international literature, which shows that reflection enhances thinking clarity, promotes accountability, and strengthens clinical and ethical reasoning[6].

Despite this receptiveness, reflective opportunities in Saudi PGME are frequently informal, inconsistently facilitated, and insufficiently scaffolded. Many educational interactions such as M&M meetings, feedback discussions, and case reviews offer inherent opportunities for reflection but are not structured to promote deep reflective inquiry. This often leads to reflection that is descriptive rather than analytical, superficial rather than transformational. In contrast, reflective practice as described by theorists such as Schön, Kolb, and Mezirow requires explicit time, guidance, and psychological safety to move beyond recounting events toward

critically evaluating assumptions, reasoning processes, and behavioral patterns [3–5].

4.1. Cultural and Contextual Influences on Reflective Engagement

The Saudi medical training environment is shaped by cultural norms that can influence the willingness and ability of residents to engage in reflective practice. As noted in several included studies, residents often practice in hierarchical clinical environments where expressions of uncertainty or acknowledgment of error may be perceived as signs of weakness or incompetence [18]. This cultural dynamic has profound implications for reflective engagement, given that authentic reflection frequently requires vulnerability, openness, and honest self-appraisal.

Perfectionism, both self-imposed and culturally reinforced, may also limit the depth of reflection. In settings where trainees feel pressure to present themselves as competent and decisive, they may avoid discussing cognitive errors, emotional distress, or areas of weakness. These concerns can lead to defensive or superficial reflections that limit opportunities for meaningful learning. The literature suggests that unless training programs cultivate psychosocial safety, residents may view reflective tasks as risky rather than beneficial [27].

4.2. Structural Barriers: Workload and Faculty Preparation

Structural barriers further complicate the integration of reflective practice. Residents frequently describe heavy clinical workloads, service-based scheduling pressures, and limited protected academic time as major obstacles to engaging in thoughtful reflection. In high-volume training environments, educational activities that require time, introspection, and structured facilitation are often deprioritized in favor of more immediate clinical responsibilities [38].

Faculty readiness also presents a critical challenge. Several included sources suggest that while faculty members value reflection, they may lack the skills necessary to facilitate reflective discussions in a psychologically safe and academically productive manner [23]. Effective facilitation requires understanding how to guide residents through structured questioning, how to manage emotional responses, and how to balance support with challenge. Without this training, reflective activities may devolve into either judgmental criticism or unstructured conversation, limiting their educational impact.

4.3. Misalignment between Reflective Intent and Assessment Practices

Assessment practices represent another significant barrier to reflective integration. In many programs, reflection is not tied to formal evaluation or is assessed superficially, reducing motivation for residents to invest effort in developing reflective depth [39]. Where reflection is mandated but poorly assessed, trainees may respond with minimal compliance-driven submissions rather than genuine reflective engagement. International literature shows that assessment models that reward authenticity, process, and critical thinking (not perfection) are essential to cultivating reflective capacity.

A contributing challenge in the Saudi context is the absence of validated rubrics or frameworks for evaluating reflective depth within SCFHS curricula. Programs may therefore struggle to determine whether a resident's reflective output is satisfactory or whether it indicates critical thinking and meaningful learning. Establishing clear expectations, templates, and assessment guides would enhance consistency and signal to trainees that reflection is a valued component of competency-based training.

4.4. Aligning Saudi Practice with International Evidence

Existing evidence, ranging from reflective writing to simulation debriefing, indicates that reflection is an educationally valuable practice with recognized benefits for postgraduate trainees [6]. Comparing this with the current Saudi situation reveals an important nuance: Saudi programs are not starting from zero. Under the SCFHS umbrella, most training programs already employ well-recognized educational strategies, competency-based curricula, simulation-based learning, continuous feedback mechanisms and the routine use of e-portfolios or e-logbooks for documentation and feedback. These methods all contain natural "entry points" for reflection; what is missing is explicit design and documentation of reflection as an intentional, assessable learning activity. Strengthening the reflective dimension

of these existing mechanisms, rather than introducing entirely new methods, may therefore represent a practical and feasible approach for SCFHS programs moving forward.

5. From Implicit to Explicit: A Practical Agenda for SCFHS

Given this landscape, the main gap is not the absence of tools, but the lack of deliberate reflective structures within existing tools. An achievable agenda for SCFHS and training centers could include:

- **Making Reflection Visible in Curricula:**
    - Adding explicit learning outcomes related to reflective capacity under the domains of lifelong learning, professionalism, and Scholar roles.
    - Clarifying where reflection is expected (e.g., after simulations, during portfolio review, in morbidity and mortality meetings).
- **Embedding Simple Reflective Prompts into Existing Activities:**
    - Incorporating 2–3 structured questions into simulation debriefings, e-portfolio entries, and feedback encounters.
    - Encouraging brief written or verbal reflections rather than long essays to maintain feasibility in busy clinical environments.
- **Using Established Rubrics in a Light, Formative Way:**
    - Adapting tools such as the REFLECT rubric to provide formative feedback on residents' reflective writing or discussion, without turning reflection into a burdensome high-stakes assessment [40].
- **Faculty Development Focused on Coaching Reflection:**
    - Developing faculty capacity to coach and support reflective practice is essential, but it does not need to be resource-intensive or time-consuming. Using brief, focused faculty development is sufficient to improve supervisors' ability to facilitate reflection effectively.
    - Equip faculty with simple, practical strategies, such as using reflective questioning techniques, normalizing uncertainty during clinical discussions, and linking residents' reflections to patient care and well-being.
    - Micro-sessions can be embedded into existing meetings, simulation debriefings, or monthly academic half-days, allowing faculty to adopt reflective coaching practices without adding substantial workload.
- **Documenting and Researching Local Practice:**
    - Encouraging Saudi programs to study the impact of these reflective strategies on resident learning, clinical reasoning, and professionalism, thereby building a local evidence base rather than relying solely on international data.

Figure 2 outlines the barriers that may hinder the effective use of reflection in Saudi medical education, along with potential opportunities and recommendations for its better implementation.

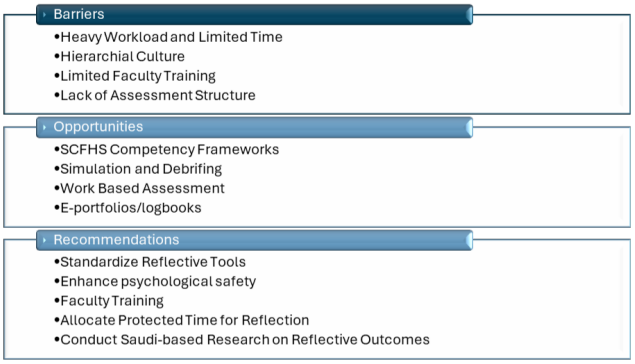


Figure 2. Summary of barriers, opportunities, and recommendations influencing reflective practice in Saudi postgraduate medical education.

6. Limitations

This scoping review provides a comprehensive mapping of reflective practice within Saudi postgraduate medical education; however, several limitations should be acknowledged when interpreting the findings. First, the overall number of Saudi-based studies directly examining reflective

practice remains relatively small compared to the international literature. This limited body of evidence constrains the ability to identify definitive trends, evaluate long-term outcomes, or draw strong conclusions regarding the effectiveness of reflective interventions across different specialties. The scarcity of empirical research also reflects the early developmental stage of reflective practice within Saudi PGME, a factor that inherently limits the depth of available analysis.

Second, most included studies relied heavily on self-reported perceptions and subjective evaluations rather than objective performance metrics or rigorously measured educational outcomes. While perception-based research provides valuable insight into resident attitudes and experiences, it does not allow for reliable assessment of how reflection influences clinical reasoning, competency attainment, or patient care. Without validated tools to measure reflective depth or competence, interpretation of resident-reported improvements should be made cautiously.

Third, the review identified considerable variability in terminology used to describe reflective activities. Some studies conceptualized reflection within the context of professionalism, debriefing, or feedback, without explicitly using the term "reflective practice." This may have resulted in relevant studies being overlooked despite thorough databases and grey literature searches. Although efforts were made to include reflective-adjacent activities (e.g., simulation debriefing, portfolio use), heterogeneity in definitions complicates synthesis and comparison across studies.

Fourth, the review included only English-language publications. This exclusion criterion may have omitted additional local reports, institutional documents, or Arabic-language reflections that could contribute meaningful insight into how reflection is practiced or perceived in Saudi PGME. Although SCFHS curricula were included, unpublished reflective guidelines or internal training materials were not accessible.

Fifth, the scoping review methodology, while appropriate for mapping emerging fields, does not involve critical appraisal of study quality. As such, studies with methodological limitations remain part of the synthesized evidence. This approach supports breadth over depth but limits conclusions about the rigor or effectiveness of reflective practices examined.

Finally, the review is limited by potential publication bias, as programs successfully implementing reflective initiatives may be more likely to publish their experiences, while those encountering challenges or limited uptake may remain unreported. This bias may create an overly optimistic impression of reflective engagement within Saudi PGME.

Despite these limitations, the review offers the first comprehensive and up-to-date synthesis of reflective practice in Saudi postgraduate medical education. It identifies critical gaps, highlights promising practices, and provides a foundation for future scholarship and policy development.

7. Conclusions

Across international medical education systems, reflective practice is considered as an essential competency that supports clinical reasoning, strengthens professionalism, enhances patient safety, and promotes lifelong learning. In the context of Saudi postgraduate medical education, this review shows that reflective practice is gaining increased recognition but remains in the early stages of structured integration.

SCFHS curricula acknowledge reflection conceptually however, the current implementation across residency programs is inconsistent and often informal. Residents report clear benefits when reflective activities are intentionally facilitated but these opportunities are not uniformly embedded within training structures. Many reflective interactions lack the scaffolding, psychological safety, and faculty expertise required for deeper critical reflection.

Addressing the cultural, structural, and educational barriers identified in this review will require coordinated efforts from SCFHS, training institutions, and faculty leaders. Cultural norms that discourage admitting uncertainty or discussing emotional experiences must be countered through educational strategies that promote psychological safety. Structural challenges, such as heavy workloads, limited protected time, and variable institutional priorities must be addressed to make reflection a sustainable component of training rather than an optional task.

International best practices offer clear pathways for strengthening reflective capacity, including defined reflective competencies, structured tools, faculty development programs, and supportive assessment frameworks. By adapting these strategies to the Saudi context, SCFHS can embed reflection more deeply within competency-based training models.

Authors Contributions

The authors contributed equally in all aspects of this review. This includes identifying the review focus, designing the research strategy, conducting the literature search, selecting and synthesizing the relevant evidence and interpreting the finding within the context of the postgraduate medical education in Saudi Arabia. They drafted the manuscript, revised and approved the final version for submission.

Funding

The study was self-funded, and the authors had no other sources of funding.

Institutional Review Board Statement

This study is a scoping review of previously published literature and did not involve human participants, personal data, or intervention. Therefore, ethical approval and informed consent were not required.

Informed Consent Statement

Not applicable.

Data Availability Statement

All data used in this review are from previously published sources, which are cited in the manuscript. No new data were generated.

Conflicts of Interest

The authors have no conflict of interest.

References

[1] Accreditation Council for Graduate Medical Education (ACGME), 2022. ACGME Common Program Requirements (Residency). ACGME: Chicago, IL, USA. Available from: https://www.acgme.org/globalassets/pfassets/programrequirements/cprresidency_2023v3.pdf

[2] Gamborg, M.L., Mehlsen, M., Paltved, C., et al., 2023. Clinical decision-making and adaptive expertise in residency. BMC Medical Education. 23(1), 22.

[3] Kolb, D.A., 1984. Experiential Learning: Experience as the Source of Learning and Development. Prentice Hall: Englewood Cliffs, NJ, USA.

[4] Schön, D.A., 1983. The Reflective Practitioner: How Professionals Think in Action. Basic Books: New York, NY, USA.

[5] Mezirow, J., 1991. Transformative Dimensions of Adult Learning. Jossey-Bass: San Francisco, CA, USA.

[6] Mamede, S., Schmidt, H.G., Rikers, R.M.J., 2008. Effects of reflective practice on the accuracy of medical diagnoses. Medical Education. 42(5), 468–475.

[7] Toubassi, D., Forte, M., Herzog, L., et al., 2022. Supporting resident wellness through reflection on professional identity: A novel curriculum. Education for Health Professionals. 5(3), 85–95.

[8] Winkel, A.F., Yingling, S., Jones, A.A., 2017. Reflection as a learning tool in graduate medical education: A systematic review. Journal of Graduate Medical Education. 9(4), 430–439.

[9] ACGME, 2023. Internal Medicine Milestones, Second Version. ACGME: Chicago, IL, USA. Available from: https://www.acgme-i.org/globalassets/acgme-international/milestones-2.0/internalmedicinemilestones2.0int.pdf

[10] Frank, J.R., Snell, L., Sherbino, J. (Eds.), 2015. CanMEDS 2015 Physician Competency Framework. Royal College of Physicians and Surgeons of Canada: Ottawa,ON, Canada. Available from: https://www.royalcollege.ca/content/dam/document/standards-and-accreditation/2015-canmeds-framework-reduced-e.pdf

[11] Thoma, B., Mohindra, R., Savard, N., et al., 2023. Emerging concepts in the CanMEDS Physician Competency Framework. Canadian Medical Association Journal. 195(12), E421–E427.

[12] GMC, 2018. The Reflective Practitioner: Guidance for Doctors and Medical Students. GMC: London, UK. Available from: https://www.gmc-uk.org/cdn/documents/dc11703-pol-w-the-reflective-practioner-guidance-20210112_pdf-78479611.pdf

[13] Kingdom of Saudi Arabia, Ministry of Health, 2021. Health Sector Transformation Program: Delivery Plan. Ministry of Health: Riyadh, Saudi Arabia. Available from: https://www.vision2030.gov.sa/media/0wop2tds/hstp_eng.pdf

[14] Saudi Commission for Health Specialties, 2024. Saudi Board Family Medicine Curriculum: 2024 Update. SCFHS: Riyadh, Saudi Arabia.

[15] Alotaibi, F.S., 2012. Implementing portfolio in postgraduate general practice training in Saudi Arabia: Benefits and recommendations. Saudi Medical Journal. 33(10), 1053–1058.

[16] Alaska, Y.A., Alkutbe, R.B., 2023. What do we know about patient safety culture in Saudi Arabia? A Descriptive Study. Journal of Patient Safety. 19(8), 517–524.

[17] Alrasheeday, A.M., Alkubati, S.A., Alrubaiee, G.G., et al., 2024. Estimating the proportion and barriers of

medication error reporting among nurses in Hail City, Saudi Arabia. Journal of Multidisciplinary Healthcare. 17, 2601–2612.

[18] AlMaturi, M.B., Alsulami, S., Elkhalifa, A.M.E., et al., 2025. Patient safety reporting systems in Saudi Arabian hospitals: Barriers and enablers. Journal of Nursing Safety and Patient Practice. 2(3), 120–128.

[19] Almansour, M., Abouammoh, N., Idris, R.B., et al., 2024. Exploring medical students' experience of the learning environment and professionalism: A mixed-methods study in a Saudi medical college. BMC Medical Education. 24, 723.

[20] Fida, N.M., Hassanien, M., Shamim, M.S., et al., 2018. Students' perception of a portfolio as a learning tool at King Abdulaziz University medical school. Medical Teacher. 40(suppl 1), S104–S113.

[21] Alotaibi, H.M., Alharithy, R., Alotaibi, H.M., et al., 2022. Importance of the reflective logbook in improving the residents' perception of reflective learning in the dermatology residency program in Saudi Arabia: Findings from a cross-sectional study. BMC Medical Education. 22(1), 862.

[22] Tricco, A.C., Lillie, E., Zarin, W., et al., 2018. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and explanation. Annals of Internal Medicine. 169(7), 467–473.

[23] Khoja, A.A., 2025. Reflective Practice within the Medical Setting in Saudi Arabia: An Exploratory Qualitative Case Study [PhD Thesis]. Columbia University: New York, NY, USA.

[24] Saudi Commission for Health Specialties (SCFHS), 2022. Saudi Board Pediatrics Curriculum. SCFHS: Riyadh, Saudi Arabia. Available from: https://scfhs.org.sa/sites/default/files/2022-01/Pediatric%20Curricula.pdf

[25] AlRadini, F.A., 2022. Perceptions of portfolio assessment in family medicine graduates: A qualitative interview study. BMC Medical Education. 22, 905. DOI: https://doi.org/10.1186/s12909-022-03991-7

[26] Alzoraigi, U., Almoziny, S., Almarshed, A., et al., 2022. Integrating medical simulation into residency programs in the Kingdom of Saudi Arabia. Advances in Medical Education and Practice. 13, 1453–1464. DOI: https://doi.org/10.2147/amep.s382842

[27] Rudolph, J.W., Simon, R., Rivard, P., et al., 2007. Debriefing with good judgment: Combining rigorous feedback with psychological safety. Simulation in Healthcare. 25(2), 361–376.

[28] Eppich, W., Cheng, A., 2015. Promoting excellence and reflective learning in simulation (PEARLS): Development and rationale for a blended approach to health care simulation debriefing. Medical Teacher. 10(2), 106–115.

[29] Alrawdhan, N., Althubaiti, A., Alzahem, A., et al., 2025. Cultivating professionalism in Saudi Arabian neurology residency programs: The impact of case-based learning. Advances in Medical Education and Practice. 16, 287–295. DOI: https://doi.org/10.2147/amep.s499212

[30] Saudi Commission for Health Specialties (SCFHS), 2021. Saudi Board Emergency Medicine Curriculum. SCFHS: Riyadh, Saudi Arabia. Available from: https://scfhs.org.sa/sites/default/files/2022-01/Emergency%20Medicine.pdf

[31] Alruqi, I., Al-Nasser, S., Agha, S., 2024. Family medicine resident experience toward workplace-based assessment form in improving clinical teaching: An exploratory qualitative study. Advances in Medical Education and Practice. 15, 37–46. DOI: https://doi.org/10.2147/AMEP.S431497

[32] Hameed, T.K., Masuadi, E., Al Asmary, N.A., et al., 2018. A study of resident duty hours and burnout in a sample of Saudi residents. BMC Medical Education. 18(1), 180.

[33] Abu Zuhairah, A.R., Al-Dawood, K.M., Khamis, A.H., 2015. Family medicine training in Saudi Arabia: Are there any variations among different regions? Journal of Family and Community Medicine. 22(2), 106–110.

[34] Machin, L.L., Baker, P., 2023. Building reflective spaces for junior doctors to promote ethical, legal and professional learning relating to clinical practice. The Clinical Teacher. 20(2), e13567.

[35] Rule, A.R.L., Warrick, S., Rule, D.W., et al., 2022. Using reflective writing to explore resident resilience during global health electives. American Journal of Tropical Medicine and Hygiene. 106(3), 923–929.

[36] Fielding, A., Mundy, B.E., Tapley, A., et al., 2021. Study protocol: Content and perceived educational utility of different modalities of clinical teaching visit (CTV) workplace-based assessments within Australian general practice vocational training: A cross-sectional study. BMJ Open. 11(4), e045643.

[37] Kovach, N., Dix, S., Brand, G., et al., 2023. Impact of art and reflective practice on medical education in the emergency department. Emergency Medicine Australasia. 35(3), 450–455.

[38] Lodge, J., Neptune, C., Tun, N.N., 2024. Factors affecting engagement with portfolio-based reflection among internal medicine trainees: A survey-based study. Cureus. 16(6), e63022.

[39] Fida, N.M., Shamim, M.S., 2016. Portfolios in Saudi medical colleges: Why and how? Saudi Medical Journal. 37(3), 245–248. DOI: https://doi.org/10.15537/smj.2016.3.12937

[40] Wald, H.S., Borkan, J.M., Taylor, J.S., 2012. Fostering and evaluating reflective capacity in medical education: Developing the REFLECT rubric. Academic Medicine. 87(1), 41–50.