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Supervision, Entrustment, and Competency: Implementing EPAs in Pharmacy Workplace Training

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Abstract

This study investigated how practical it is to integrate pharmacy entrustable professional activities (EPAs) into workplace-based training programs. Focus group discussions were conducted with pharmacy faculty, experienced workplace educators, and practicing pharmacists across a variety of practice environments. Participants explored the incorporation of 15 EPAs aligned with entry-level pharmacy competencies. The discussions were guided by the validated Quality of Entrustable Professional Activities (QUEPA) rubric. Participants were also asked to identify factors that could facilitate or hinder EPA implementation in real-world training settings.

Between October and November 2023, five focus groups involving 24 participants were held. Analysis highlighted four main themes affecting EPA implementation: (1) the need for clear, measurable entry-level tasks, (2) existing limitations and barriers to applying EPAs, (3) workplace conditions that support implementation, and (4) the role of supervisors in entrustment decisions. Findings indicated that successful adaptation of EPAs requires addressing regulatory and contextual challenges, equipping supervisors with proper training, and allowing EPAs to remain adaptable to changing professional and healthcare needs. The QUEPA rubric offered a structured method for examining how EPA statements can be integrated into workplace-based training. Participants highlighted the value of EPAs in guiding curriculum design and potentially broadening the professional responsibilities of pharmacists. The findings also underscored that entrustment decisions, which rely heavily on supervisors, play a critical role in determining the practicality of implementing EPAs. For EPAs to serve effectively as a supportive educational framework, ongoing refinement and active collaboration among stakeholders are crucial.

Keywords: Supervision, Competency development, Entrustable professional activities (EPAs), Entrustment, Workplace-based training

Introduction

Pharmacy education has increasingly embraced competency-based approaches, replacing traditional time-based curricula with frameworks that focus on demonstrable outcomes and professional readiness [1, 2]. These models aim to ensure that graduates possess the practical knowledge, skills, and professional attitudes required to perform essential pharmacy tasks independently, rather than assuming competency is automatically achieved by graduation [3, 4]. Entrustable professional activities (EPAs) represent a task-oriented approach within competency-based education. EPAs are defined as discrete, observable activities that integrate the necessary competencies for professional practice [1, 4, 5]. Unlike traditional competency frameworks, which describe the qualities a trainee should acquire, EPAs specify the tasks that trainees should be capable of performing without supervision [1, 5, 6]. This approach provides a clear and measurable pathway for assessing practice readiness and ensures that pharmacy graduates

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are prepared to execute core professional responsibilities upon registration [5–9].

The creation and implementation of EPAs in workplace-based settings is a complex, time-intensive process. It involves a thorough analysis of the profession's scope of practice and identification of critical tasks expected of trainees [5]. Ten Cate and colleagues established foundational principles for EPA development, highlighting key characteristics and stressing the importance of aligning EPAs with the training environment [5, 10]. Following this framework, the American Association of Colleges of Pharmacy (AACP) developed 15 core EPAs, covering essential activities such as medication management, patient counseling, and processing medication orders across practice settings [8]. These EPAs were later refined into 13 Core Entrustable Professional Activities (COEPAs), integrating them with the Center for the Advancement of Pharmacy Education outcomes [11, 12]. Implementing EPAs ensures that educational objectives align with workplace expectations and prepares graduates for independent practice through practical assessments [13–16].

Research on EPA feasibility often involves engaging multiple stakeholders, including students, supervisors, and educators, to understand their perspectives on EPA relevance and applicability [14, 17–20]. Tools like the Quality of Entrustable Professional Activities (QUEPA) and Queen's EPA Quality (EQual) rubrics, originally used in medical education, have been adapted to explore these perspectives in pharmacy training [14, 17, 19]. While prior studies affirm the overall relevance of EPAs, they also highlight challenges, such as the need to adapt certain EPAs to local contexts and inconsistencies in supervisor decision-making [17, 18, 20]. Variability in supervisors' entrustment decisions has been noted in the US and Australia, underscoring the necessity of establishing clearer criteria to ensure EPAs support trainees' progression toward independent practice [20]. Understanding these challenges is critical for effective EPA adaptation and implementation in workplace-based education.

Although ten Cate's framework provides foundational guidance for EPA creation, it does not fully address contextual factors influencing implementation across different practice settings [1, 5, 10]. Workplace-based training environments vary, and implementing EPAs effectively requires consideration of regulatory, cultural, and organizational constraints [3, 10]. Previous validation studies suggest that some of the 15 core AACP EPAs may not fully align with all workplace contexts, which can affect their practical applicability [17, 18]. Additionally, the quantitative structure of rubrics like QUEPA and EQual may not capture the reasons why certain EPAs are perceived as less relevant within broader pharmacy practice [9, 21, 22].

As pharmacy education expands globally, including in regions such as Australia and the Middle East, understanding how to integrate EPAs effectively in diverse workplace settings has become increasingly important [20, 23]. In Qatar, regulatory frameworks define the scope of practice for pharmacists, which can restrict certain activities, such as taking vital signs or demonstrating medical devices in community pharmacies. Although prior studies [17, 18] identified barriers to EPA implementation, none have systematically examined how legal and regulatory constraints influence the feasibility of adopting EPAs in such contexts.

Examining these contextual and regulatory factors is essential to optimize EPA integration and ensure they reflect the evolving scope of pharmacy practice [5, 10]. This study therefore aims to assess the feasibility of adapting and implementing the 15 core AACP EPAs in Qatar's workplace-based pharmacy training, identify key facilitators and barriers, and explore how EPAs can effectively enhance practical training for pharmacy graduates.

Materials and Methods

This research employed a qualitative design using focus group interviews to investigate the feasibility of adapting and implementing pharmacy EPAs in workplace-based training [14, 18]. The interview protocol was based on the validated QUEPA rubric and informed by previous studies in this area. Focus groups were chosen over individual interviews to promote dynamic discussions, enabling participants to share their perspectives on both facilitators and barriers to EPA adoption and their understanding of entrustment principles. Verbatim transcripts were analyzed thematically using a hybrid approach combining deductive and inductive coding. Key participant quotes were extracted to illustrate the themes.

The study took place at the College of Pharmacy, Qatar University, the country's sole pharmacy program. Between October and November 2023, a purposive sampling strategy recruited 32 stakeholders to ensure

representation across different pharmacy sectors and diverse professional experiences. Most clinical and community pharmacists were alumni of the College and familiar with its experiential training program. Invitations were sent via email, with reminders to non-responders after two weeks. Participants who agreed to join were scheduled for semi-structured focus groups, led by the principal investigator (TD) and moderated by an experienced qualitative researcher (FN), who also recorded observational notes. Sessions were conducted via Microsoft Teams and lasted approximately 60 minutes. Participants were grouped by practice setting, with hospital pharmacists clustered together due to the centralized nature of hospital pharmacy services under Hamad Medical Corporation. All participants provided written informed consent and completed demographic forms detailing their supervisory and educational experience. With prior permission, sessions were audio-recorded for transcription.

Before the discussions, participants were provided with the original 2016 AACP 15-EPA statements, representing entry-level practice in the US. Although the 2022 COEPA update reduced EPAs to 13 and reorganized them into three domains with twelve subdomains, the 2016 version was used for discussion because it better illustrated the potential for expanding pharmacists' roles (e.g., immunization activities) and included more detailed task descriptors. Participants were informed of the COEPA updates but discussions focused on adapting the 2016 EPAs to the Qatari context. During focus groups, participants responded to seven open-ended questions derived from the QUEPA rubric [24]. These questions explored the feasibility of adapting EPAs locally, including which activities were observable and which factors might facilitate or hinder implementation. The QUEPA rubric evaluates EPAs across four dimensions: focus, observability, realism/generalizability, and integration of competencies [24].

The interview guide was piloted with three pharmacists and revised for clarity and comprehensiveness based on feedback. An iterative approach was applied during the first three focus groups, allowing insights to refine subsequent questions. Data collection continued until thematic saturation was reached, which occurred by the fifth focus group. Audio recordings were transcribed verbatim and anonymized with unique participant codes to maintain confidentiality.

Data were analyzed independently by two researchers (TD and SA) using a hybrid deductive-inductive approach. Deductive codes were informed by the QUEPA rubric, while inductive codes captured emergent insights. Segments of text—words, sentences, or phrases—were assigned descriptive codes. Analysis followed Braun and Clarke's thematic framework [25], emphasizing repeated transcript review to ensure a deep understanding and consistent coding. Coding discrepancies were reconciled, and a third investigator (FN) validated the final coding framework to ensure triangulation.

Themes were identified by clustering related codes, and data saturation was confirmed through iterative consensus discussions among the research team. Key quotations were selected to illustrate and support each theme. Trustworthiness and credibility were maintained through investigator triangulation, peer debriefing, reflexive journaling by the principal investigator (TD), and a documented audit trail, following Lincoln and Guba's criteria [26, 27]. The study also adhered to the Consolidated Criteria for Reporting Qualitative Research.

Results and Discussion

A total of 24 participants took part in five focus group sessions between October and November 2023. Participants included 15 faculty members from Qatar University's College of Pharmacy and 9 external stakeholders, including hospital and community pharmacy directors and practicing pharmacists who supervise students in both academic and workplace settings. Demographic characteristics are summarized in Table.

Thematic analysis identified four major themes concerning EPA adaptation, implementation, and the factors influencing their use: 1. Clarity and measurability of tasks – Participants emphasized the importance of EPAs being well-defined and assessable in real-world settings; 2. Limitations and barriers to implementation – Regulatory constraints, institutional policies, and operational challenges were noted as obstacles to EPA adoption; 3. Environmental and organizational facilitators – Supportive infrastructure, policies, and collaborative workplace cultures were seen as key enablers; 4. Supervisor influence on entrustment decisions – Variability in supervisors' judgments and

experience significantly affected consistency in EPA application.

Themes and subthemes are summarized in **Figure 1**, with illustrative quotes demonstrating how participants experienced and interpreted these factors in workplace-based training.

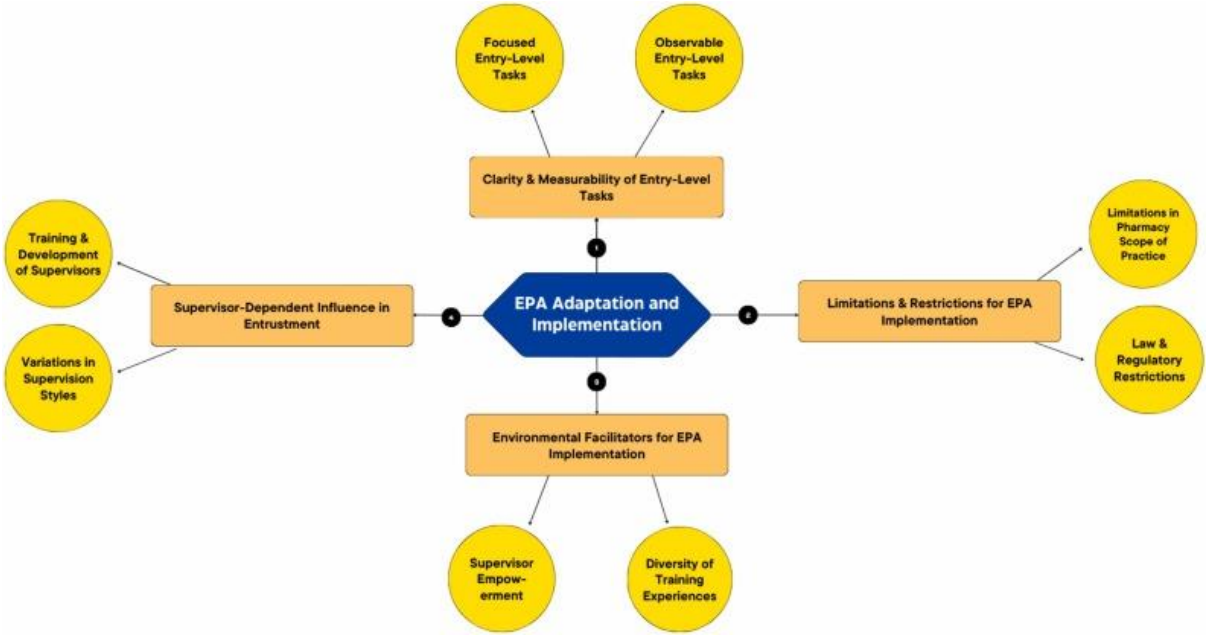

Figure 1. Overview of factors influencing the feasibility, facilitators, and barriers of implementing and adapting entrustable professional activities (EPAs) in preregistration pharmacy workplace training.

Table 1. Summary of demographic and professional characteristics of participants in the focus group discussions.

Practice Setting	Role/Position	Number of Participants (n)
Academic – College of Pharmacy	Teaching Assistant	2
	Assistant Professor	3
	Lecturer	1
	Associate Professor	5
	Professor	4
Community Pharmacy	Community Pharmacy Director	2
	Community Pharmacist	1
Hospital Pharmacy	Director of Pharmacy	1
	Director of Clinical Trials	1
	Hospital Dispensary Pharmacist	1
	Clinical Pharmacist	1
	Assistant Director	2
Total		**24**

Theme 1: clarity and measurability of entry-level tasks

Participants generally expressed a positive perspective on the potential to adapt and implement the AACP EPA statements in workplace-based pharmacy settings. They considered the statements to be clear, specific, and straightforward, providing well-defined expectations for entry-level pharmacists. Moreover, participants emphasized that the EPAs reflected the professional

competency standards expected of new graduates in the local practice context [14, 18].

Subtheme 1.1: observable entry-level tasks

The EPAs were largely perceived as representing tasks that could be observed in practice, with action-oriented verbs that defined each statement explicitly. Participants highlighted that the statements effectively converted clinical competencies into measurable and assessable activities, allowing objective evaluation of the skills expected from pharmacy trainees. One participant reflected:

"These competencies are similar to what we usually encounter in practice, but they are now structured in a way that makes them easier to measure and observe."—Pharmacist 23

Although the majority agreed that the EPAs were observable, some participants noted that certain statements might require modification to fit particular practice settings, such as community pharmacies, in order to make them fully applicable:

"I think the EPAs are relevant, but we may need to adjust the level of autonomy a trainee has when performing these tasks in a community pharmacy environment."—Pharmacist 2

Subtheme 1.2: focused entry-level tasks

Participants indicated that the EPA statements were precise, clearly articulated, and self-explanatory in defining the tasks expected of graduate pharmacists. One participant commented:

"They are well-focused and organized into domains, which makes the expectations very clear to me."—Pharmacist 13

Additionally, participants appreciated the inclusion of examples and supporting tasks accompanying each EPA, noting that these illustrations enhanced comprehension and clarified the scope of activities:

"The examples provided with the EPA statements are very clear and help in understanding the specific tasks involved."—Pharmacist 2

Theme 2: limitations and restrictions for EPA implementation

Despite the overall positive outlook on adapting and implementing EPAs, participants identified certain limitations that could affect feasibility. Key barriers included legal and regulatory restrictions that limit the tasks trainees and pharmacists are permitted to perform. Furthermore, the variability in pharmacists' scope of practice across different settings was highlighted as a factor reducing the generalizability of some EPAs. Participants emphasized that contextual adaptation is necessary to ensure that EPAs can be effectively implemented across various patient-care environments [14, 18].

Subtheme 2.1: legal and regulatory constraints

Participants expressed concern that regulatory restrictions could limit the ability of trainees to perform certain tasks outlined in the EPA statements, thereby affecting their generalizability across practice settings. A commonly cited example involved community pharmacists, who are not permitted to perform tasks such as compounding or reconstituting antibiotics due to local regulations:

"There are tasks that I would expect all graduates to perform, but unfortunately regulations here prevent them from doing so."—Pharmacist 1

Participants also noted discrepancies between theoretical expectations and regulatory limitations, particularly in community pharmacy practice. For instance, while pharmacists are expected to possess the knowledge to educate patients on using a glucometer, regulations prevent them from physically demonstrating its use:

"Pharmacists need to understand how to operate a glucometer, but they are not allowed to teach patients directly, even though, in theory, they should provide guidance. This creates a clear inconsistency in our system."—Pharmacist 15

Despite these challenges, participants agreed that national regulations should not hinder the adaptation of future EPA statements. They emphasized that trainees should acquire a broad range of competencies to prepare them for professional practice in international contexts. The adaptation of AACP EPAs was seen as a means to set high standards for pharmacists beyond local or regional boundaries:

"Setting a high standard for pharmacy graduates from Qatar University ensures they are capable of working anywhere, and this provides additional benefits if they practice abroad."—Pharmacist 8

Subtheme 2.2: limitations in scope of practice

Participants highlighted that community pharmacists face constraints in their scope of practice, while hospital pharmacy practice remains comparatively advanced.

This disparity limits the applicability and observability of some EPAs across all sectors:

"Looking at the different settings, community pharmacy is unfortunately not well integrated into the healthcare system."—Pharmacist 17

Within Qatar, community pharmacy practice is still largely centered around medication supply, creating a noticeable gap compared with hospital clinical pharmacy. Participants also emphasized that organizational vision and mission directly influence the scope of services and assigned responsibilities, which in turn affects the practical implementation of EPAs:

"An organization's vision and mission determine the job roles and responsibilities of its staff, and this could act as a barrier to implementing comprehensive EPAs."—Pharmacist 11

Theme 3: environmental facilitators for EPA adaptation and implementation

While participants recognized the barriers associated with adapting EPAs, they also identified external contextual factors that could support successful implementation. The structured nature of EPAs and the entrustment framework were seen as empowering supervisors in both assessment and oversight roles. Additionally, participants emphasized the importance of offering trainees diverse experiences across practice sites to maximize opportunities for skill development and application.

Subtheme 3.1: enhancing supervisor engagement through EPAs

Participants expressed confidence that supervisors would engage positively with the adaptation and implementation of EPAs. Many indicated that supervisors are motivated to expand the scope of pharmacy practice, and EPAs were perceived as a vehicle to support this change:

"Supervisors are motivated to advance the profession and broaden the pharmacist's role, and I think EPAs can help drive that progress."—Pharmacist 1

Moreover, participants highlighted that supervisors already have experience in assessing student competencies. The EPA framework, with its emphasis on direct observation and structured evaluation, was viewed as enhancing the supervisor's ability to guide trainee development, ultimately supporting the effective implementation of EPAs in workplace-based training:

"EPAs would be familiar to supervisors since they align with the competencies they already evaluate. It just provides a new perspective, giving supervisors a larger role in shaping the student's readiness for independent practice."—Pharmacist 6

Subtheme 3.2: varied training experiences across practice sites

Participants highlighted that EPAs can support the development of "well-rounded, practice-ready" pharmacists with versatile and transferable skills. They emphasized that the effectiveness of EPAs in trainee development and assessment depends heavily on the nature of the training environment. One participant noted that the variety of current rotation sites provides opportunities to engage trainees with a broad range of EPAs:

"The variety in rotation settings allows us to implement many of these EPAs across different environments, giving students multiple opportunities to learn and develop."—Pharmacist 9

While participants agreed that core EPAs should ideally be observable and applicable across settings, they recognized that certain practice sites naturally emphasize specific EPAs due to their unique scope of practice. For example, comprehensive medication reviews may not be feasible in community pharmacy settings, whereas managing pharmacy operations during a work shift is more commonly expected in both hospital and community pharmacy dispensing. Participants stressed that designing curricula to expose trainees to diverse practice environments facilitates broader adaptation and application of core EPAs within the pharmacy profession:

"Some core principles or EPAs must be incorporated across all practice sites."—Pharmacist 23

Theme 4: supervisor-dependent influence on entrustment decisions

The influence of supervisors emerged as a critical factor affecting both the feasibility and consistency of EPA implementation. Participants stressed the need for robust supervisor training while noting that differences in supervision approaches can influence how EPAs are interpreted and applied in practice.

Subtheme 4.1: supervisor training and development for EPA implementation

Participants pointed out the lack of a standardized approach to training supervisors for EPA use, both in Qatar and internationally, which may contribute to inconsistent application. They emphasized the importance of structured and comprehensive training to clarify supervisors' responsibilities and support the effective integration of EPAs:

"It is essential that supervisors understand the importance of applying these EPA tasks and actively observe and guide students as they perform them."—Pharmacist 7

Subtheme 4.2: variability in supervision styles

Participants also highlighted that differences in supervisors' precepting styles could influence the entrustment of trainees for EPA tasks, potentially impacting the intended implementation of EPAs. Variability in supervision could reduce the consistency and reliability of entrustment decisions, as supervisors may interpret EPA criteria differently. Factors such as individual supervision style, familiarity with EPA frameworks, and use of assessment methods were all noted as contributors to potential inconsistencies:

"We don't have a standardized way of supervising students because everyone has different personalities and backgrounds, which inevitably leads to discrepancies in applying EPAs and determining which learners we trust to perform tasks independently."—Pharmacist 18

This study emphasizes the critical role of contextual elements, such as regulatory limitations and variations in professional scope, in determining the feasibility of implementing EPAs across diverse pharmacy practice environments. By adopting a qualitative approach, this research extends beyond prior quantitative studies to provide deeper insight into why specific EPA elements are perceived as more or less feasible for implementation [14, 17–19, 28]. Using a focus group guide based on the QUEPA rubric, participants highlighted both the rationale for adopting EPAs and the practical challenges that may hinder their integration.

One prominent finding is the potential of EPAs to serve as a structured educational tool that strengthens supervisors' roles as both mentors and assessors. Clear, task-oriented workplace activities allow EPAs to function as developmental instruments during experiential training, supporting trainees' progression toward independent practice [14, 20, 29]. Participants expressed confidence that supervisors—particularly those motivated to broaden the professional role of pharmacists—would welcome EPAs as a means to enhance their supervisory influence and reinforce their pivotal contribution to trainee development. These observations are consistent with previous research showing that EPAs promote structured, continuous feedback between supervisors and learners [20, 30–32].

The variety of training experiences available to trainees was also identified as a key facilitator for EPA implementation. Exposure to multiple practice sites allows students to encounter a wider range of EPA tasks, which enhances skill transferability and ensures tasks can be effectively observed and assessed in authentic practice settings. Nevertheless, participants emphasized that some EPA tasks may be more suitable for particular environments, highlighting the importance of deliberate curriculum design to provide diverse experiential opportunities [33].

Participants appreciated the clarity and specificity of EPA tasks, noting that their structured format, focus on observable and measurable activities, and reliance on entrustment-based assessment align with competency-based education principles by providing clear benchmarks for professional readiness [1, 3, 5, 7, 10, 13]. Consistent with prior research, Haines *et al*. [18] reported that a majority of supervisors believed the AACP EPAs accurately reflected tasks expected of pharmacy graduates. However, participants suggested that further contextual adaptation was needed, echoing findings by Elmes *et al*. [21], who identified that only a subset of the original AACP EPAs met quality standards according to the EQual rubric. The revised 2022 COEPAs aim to address these limitations. This study reinforces the need for ongoing stakeholder engagement and iterative refinement to ensure EPAs remain relevant and practical across diverse pharmacy environments [7, 10, 19, 34].

Despite their advantages, several barriers were identified that may hinder EPA integration. Challenges highlighted in both pharmacy and other health disciplines include limited understanding of EPA expectations, difficulty applying entrustment-based assessments, and overly extensive EPA lists that risk being treated as checklists rather than developmental tools [20, 28, 34, 35]. In this study, participants frequently noted a disconnect between theoretical EPA requirements and the tasks permitted under local laws and regulations. For instance, community pharmacists may be legally restricted from demonstrating the use of medical devices, despite this being listed as a supporting EPA task [7]. Such constraints underscore the need for environment-specific adaptations of EPAs, including the potential use of

rotation- or site-specific EPAs alongside core tasks to ensure feasibility and educational value [33].

Variability in supervisor engagement and individual supervision styles was another challenge. Participants noted that inconsistent entrustment decisions, due to unclear guidance or differing supervisory approaches, could compromise the reliability of EPAs as an educational framework [16, 20, 28, 36]. Structured training programs that familiarize supervisors with entrustment principles and standardized assessment procedures are crucial for reducing variability and supporting consistent, reliable evaluation of trainees [28, 37–40].

This study also contributes to understanding how context shapes the adaptation and implementation of EPAs in workplace-based training, building upon ten Cate's foundational EPA frameworks [5, 10]. Beyond their educational function, EPAs may serve as a mechanism for advancing the pharmacy profession, aligning training outcomes with evolving healthcare demands and expanding the pharmacist's professional role [3, 5, 14]. Participants highlighted the potential for EPAs to enhance trainees' competencies and support the expansion of pharmacists' responsibilities, while noting that achieving this goal requires proactive efforts to address systemic and regulatory barriers. Collaboration among educators, supervisors, and professional organizations is essential to ensure EPAs remain responsive to the dynamic nature of pharmacy practice.

Several limitations should be considered. The participant pool was limited to educators and supervisors affiliated with a single institution, many of whom were alumni, which may influence perspectives and limit generalizability. Clinical and community pharmacists were underrepresented, and industrial pharmacists were not included, restricting the applicability of findings. Additionally, the QUEPA rubric, though useful for structuring interviews, was developed for medical education and not fully validated for pharmacy, highlighting the need for context-specific assessment tools. Finally, the study focused on the 2016 AACP EPAs, as the 2022 COEPAs were not yet available; however, the findings remain relevant as they reflect the foundational EPA framework used in practice during the study period. Future research should incorporate the updated COEPAs to align with current competencies and practice expectations.

Conclusion

This study explored pharmacy educators' perspectives on the adaptation and implementation of EPAs in workplace-based training in Qatar. Educators generally supported the feasibility of EPA integration, but successful implementation requires adjustments to account for contextual factors, including legal constraints, variation in practice scope, and the establishment of standardized entrustment procedures for supervisors. The inclusion of setting-specific EPAs alongside core EPAs may help overcome contextual limitations. Overall, EPAs present a promising framework for enhancing pharmacy trainees' competencies and supporting potential expansion of the pharmacist's scope of practice. The findings contribute to the literature by emphasizing the importance of context in EPA adaptation to maximize their effectiveness in trainee assessment and professional development.

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