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SYSTEMATIC AND OTHER REVIEW

Entrustable Professional Activities in Psychiatry: A Systematic Review

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Abstract

Objective Entrustable Entrustable professional activities (EPAs) represent discrete clinical tasks that can be entrusted to trainees in psychiatry. They are increasingly being used as educational framework in several countries. However, the empirical evidence available has not been synthesized in the field of psychiatry. Therefore, the authors conducted a systematic review in order to summarize and evaluate the available evidence in the field of EPAs in undergraduate and graduate medical education in psychiatry.

Methods The authors searched PubMed, Cochrane Library, ERIC, Embase, PsycINFO, all Ovid journals, Scopus, Web of Science, MedEdPORTAL, and the archives of Academic Psychiatry for articles reporting quantitative and qualitative research as well as educational case reports on EPAs in undergraduate and graduate psychiatry education published since 2005. All included articles were assessed for content (development, implementation, and assessment of EPAs) and quality using the Quality Assessment Tool for Studies with Diverse Designs.

Results The authors screened 2807 records and included a total of 20 articles in the final data extraction. Most studies were expert consensus reports (n = 6, 30%) and predominantly conducted in English-speaking countries (n = 17, 85%). Papers reported mainly EPA development and/or EPA implementation studies (n = 14, 70%), whereas EPA assessment studies were less frequent (n = 6, 30%). Publications per year showed an increasing trend both in quantity (from 1 in 2011 to 7 in 2018) and quality (from a QATSDD score of 27 in 2011 to an average score of 39 in 2018). The main focus of the articles was the development of individual EPAs for different levels of training for psychiatry or on curricular frameworks based on EPAs in psychiatry (n = 10, 50%). The lack of empirical controlled studies does currently not allow for meta-analyses of educational outcomes.

Conclusions The concept of EPA-based curricula seems to become increasingly present, a focus in the specialty of psychiatry both in UME and GME. The lack of empirical research in this context is an important limitation for educational practice recommendations. Currently there is only preliminary but promising data available for using EPAs with regard to educational outcomes. EPAs seem to be effectively used from a curriculum design perspective for UME and GME in psychiatry.

Keywords Entrustable professional activities · Psychiatry · Systematic review

Entrustable professional activities (EPAs) represent discrete units of clinical work that can be entrusted to a medical trainee with decreasing intensity of supervision [1]. As such, they are at the center of competency-based education. A single EPA encompasses the knowledge, skills, and attitudes necessary to carry out the respective clinical work unit. In order to develop EPA-based curricula, medical educators are required to define the relevant number and scope of EPAs for their corresponding workplace-based teaching and learning setting in addition to an adequate assessment framework [2]. Several countries and different medical specialties have started to adopt EPAs within their competency-based educational frameworks in either graduate (GME) or undergraduate medical education (UME), and some are beginning to cover both UME and GME [3, 4].

Medical education researchers have started to explore how to best develop adequate sets of EPAs for the different educational stages, how trust emerges between individuals and groups, and what intra- or interindividual factors might be relevant [5, 6]. In addition to the opportunities and challenges of the EPA framework in the context of competency-based education itself [7], some countries face parallel educational reforms that need to be taken into account and integrated, such as the Milestones Project in the USA [3].

Despite overlapping clinical activities and opportunities to share experiences with implementing EPAs across medical disciplines, there are significant differences with regard to

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specialty-specific teaching and learning content. Psychiatry, with clinical interviewing as a central competence, may contribute valuable insights to the broader medical education community with regard to EPAs involving communicative competences such as establishing therapeutic alliances under challenging circumstances, exploring and dealing with suicidality, and challenging ethical problems in the context of complex clinical scenarios or effective inter- and transprofessional working strategies [8–10].

Researchers have started to summarize the growing body of literature on EPAs from different perspectives [3, 11, 12]. O'Dowd et al. found a need for methodological best practice guides in their systematic review with regard to EPAs in graduate medical education [3]; Shorey et al. examined the emerging evidence for EPAs in health professions' education in general and found gaps in terms of specific target groups, such as medical students or clinical subspecialties in their scoping review [12]; and Meyer et al. conducted a scoping review on EPAs in UME [11]. A main finding of their review was that terminology and conceptual understanding of EPAs in UME is being used inconsistently and that articles on EPA assessment did not met Ottawa Conference Criteria for Good Assessment [13] in a satisfactory way. All three reviews supported the potential of EPAs in competency-based medical education in general; yet due to the nature of these reviews, none specifically addressed the content and quality of the existing evidence specifically in undergraduate and graduate medical education in psychiatry.

Since the number of publications in this field of medical education is rapidly growing and some medical educators have started to work intensively with EPAs [3, 4], our objective was to systematically evaluate quantitative and qualitative studies as well as educational case reports on EPAs being developed (EPA definition as outcome), implemented (EPA-based curriculum design and evaluation as outcome), and assessed (measures of entrustment as outcome) in undergraduate and graduate medical education in the field of psychiatry. We envision this will help to inform medical educators in psychiatry to build on the evidence of existing studies.

Methods

We conducted a systematic review for articles reporting qualitative and quantitative research as well as conceptual and curriculum development reports on EPAs for undergraduate and graduate medical education in psychiatry [14]. We searched PubMed, Cochrane Library, ERIC, Embase, PsycINFO, all Ovid journals, Scopus, Web of Science, MedEdPORTAL, and the archives of Academic Psychiatry for articles published since 2005 after the introduction of the concept of EPAs in medical education. In addition, we went manually through selected bibliographies of articles included for full-text review and asked medical education experts for advice.

Our review process was based on the phases described in the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" guidelines (PRISMA) [14]. Our guiding question was: What are the described educational aspects and evidence for developing, implementing, and assessing EPAs in UME and GME in psychiatry? The review was registered in an international prospective register of systematic reviews.

Articles were considered eligible for data extraction if target participants included undergraduate or graduate medical trainees in psychiatry. Furthermore, we considered articles as eligible if the development of specific EPA content, implementation of EPA-based curricula, and its evaluation or the assessment of EPA-related competence measures such as entrustability or degrees of supervision were reported. We did not limit our review to specific educational interventions or comparisons.

In cooperation with a medical librarian, we designed a search strategy to retrieve and review studies published on EPAs in the field of psychiatry from the data bases mentioned above. Because of the limited body of existing literature, we decided to keep the search terms as wide as possible. Additional information on the full electronic search strategy can be made available to readers upon request. Two reviewers searched the databases using the search terms "entrustable professional activity" and "entrustable professional activities." We imported all citations into EndNote X9 (Clarivate Analytics, Philadelphia, PA, USA), sorted into groups by database searched.

The screening process was based on a defined set of inclusion and exclusion criteria (inclusion criteria: English or German text available, graduate medical education in psychiatry, undergraduate medical education in psychiatry, focus on entrustable professional activities; exclusion criteria, focus on milestones, other health professions' education, not related to psychiatry as specialty). Our initial database search resulted in 2807 articles. After removal of duplicates, two researchers screened the items (n = 1081). First, titles and abstracts were screened, and 895 articles were removed. Second, 186 articles were included in full-text reviews, and after addition of articles identified through manual search of archives and personal databases, a final selection of 20 articles was discussed with all authors and used for data extraction and synthesis. In addition, we assessed supplemental material of individual articles if considered relevant for data extraction. We used an adaption of a published data extraction form in the context of EPAs as described by O'Dowed at al. [3].

We used the Quality Assessment Tool for Studies with Diverse Designs (QATSDD) to assess the methodological quality of included articles as described in the literature [15]. Two reviewers independently assessed the quality of each study. The intraclass correlation coefficient (ICC) was calculated with STATA in order to quantify the rater agreement on quality ratings of the included studies. The final assessment of each study was determined by consensus between the two reviewers and, if necessary, by involving a third reviewer.

The variety of reported study designs and frequent lack of quantitative educational outcome measures did not allow pooling of data across studies. Descriptive study characteristics were extracted for each study, and the main results of the studies are presented in a narrative form in Table 1. Data items for extraction included countries of origin for each study, type of study, study population, range of number of EPAs studied, and the main outcome focus of the article. We used a coding scheme to categorize each study as described in the literature for development of EPAs or a set of EPAs, implementation of an EPA-based curriculum, or assessment studies in the context of EPAs [3]. Codes were applied by two authors independently and any differences resolved through discussion.

Results

The searches of PubMed, Cochrane Library, ERIC, Embase, PsycINFO, all Ovid journals, Scopus, Web of Science, MedEdPORTAL, and the archives of Academic Psychiatry databases yielded 2807 citations. After removal of duplicates, 1081 citations remained, and titles and abstracts were screened. During the process, 895 articles were excluded, and 186 articles were analyzed with full-text screening. Four additional studies were included through manual search of personal archives, the archives of Academic Psychiatry and bibliographies. Twenty articles were included into this review.

With regard to quality assessment based on the QATSDD scores, we found an overall average score of 34 (SD = 7.4, range 0–46), indicating an average medium quality level of methodological rigor. Most studies scored high with regard to the underlying theoretical framework but scored lower in terms of considering sample size based on educational outcome measures or combining qualitative and quantitative measures. This is predominantly the case for early studies in the field. We found an upward trend with regard to both quantity (n = 1 in 2011, n = 7 in 2018) and quality (average QATSDD score of 26 in 2011 and 39 in 2018) of studies on EPAs in psychiatry.

Most studies were carried out in the USA (n = 10, 50%), followed by Australia/New Zealand (n = 4, 20%), Canada (n = 3, 15%), Germany (n = 2; 10%), and the Netherlands (n = 1; 5%). In terms of study type, most were expert consensus (n = 6, 30%), followed by educational case reports (n = 4, 20%), program evaluations (n = 3, 15%), cohort studies (n = 2, 10%), validation studies (n = 2, 10%), a mixed-method study (n = 1, 5%), a qualitative study (n = 1, 5%), and a cross-sectional study (n = 1, 5%). We found no controlled intervention studies. The majority of studies was conducted in the context of GME in psychiatry (n = 14, 70%) and fewer studies in UME in psychiatry (n = 6, 30%).

Medical educators from European countries (the Netherlands and Germany) have started to publish articles on EPAs [16, 17] in psychiatry, and the total number of publications per year on EPAs in psychiatry shows an increasing trend as well. Educators from Australia and New Zealand have made top-level educational policy decisions to implement EPA-based curricula in GME [18, 19]. The EPAs considered and discussed per article ranged from 1 to 18, and the main focus of most articles was the development of individual EPAs for different levels of training for psychiatry or on curricular frameworks based on EPAs in psychiatry (n = 9, 45%). EPA implementation (n = 7, 35%) and assessment of EPAs (n = 6, 30%) were less frequently addressed.

With regard to theoretical frameworks, we found that most studies included in this review referenced competency frameworks of professional medical associations in psychiatry (e.g., the Royal Australian and New Zealand College of Psychiatrists and the Royal College of Physicians and Surgeons of Canada) [19, 20] or frameworks of national professional medical associations, e.g., the Accreditation Council for Graduate Medical Education [21] or the German National Competence-Based Learning Objectives for Undergraduate Medical Education [16].

With regard to the development of EPAs or sets of EPAs for different stages of training in psychiatry, we found a wide range of approaches (n = 9, 45%). Authors typically consulted selected literature on EPAs, competency frameworks, and official educational policy documents of medical associations most commonly with designated working groups [17, 20–24]. One article relied mostly on two experts' consensus for EPAs in mindfulness-based interventions training [25]. Another article described a qualitative approach (semi-structured interviews) to explore the EPA "conducting a ward round" [26]. Only two articles reported on additionally using surveys among key stakeholders, interviewing senior physicians or iterative methods (delphi process) to identify, define, and refine essential EPAs according to educational stage across the UME–GME continuum [24, 27]. Members of the working groups usually were specialty experts, educational experts, and trainees. Overall, EPA content validation ranged from expert consensus to local teaching institutions to national medical education contexts. We did not find an article that explicitly included patient perspectives in the development of EPAs.

Some articles primarily targeted implementation strategies for EPA-based curricula (n = 5, 25%). One article described a 9 half days long competency-based curriculum for a single EPA "administering electroconvulsive therapy" (ECT), using a 61-item assessment checklist and self-assessment of abilities as well as a final single supervisor judgment of being able to administer ECT with distant reactive supervision. This article did not report any program evaluation data [28].

Two educational case reports discussed implementation strategies for EPA-based curricula that covered the full range of graduate medical education in psychiatry [19, 29]. Weiss et al. developed a modified entrustment scale with five levels

Table 1 Overview of included studies on EPAs in psychiatry

Authors (year)	Title	Country	Setting*	Main focus**	Study design	Main reported results
Boyce et al. (2011) [27]	Using entrustable professional activities to guide curriculum development in psychiatry training	Australia/New Zealand	GME	Development	Cross-sectional survey	Four entrustable professional activities (EPAs) identified for end of first year training in psychiatry residency Survey-based content validation
Port et al. (2012) [28]	Electroconvulsive therapy training: Can it be a model of an entrustable professional activity in a competency program?	Australia/New Zealand	GME	Implementation	Educational case report	Teaching and assessment blueprint for EPA-based electroconvulsive therapy teaching curriculum for psychiatry residents
Ten Cate et al. (2012) [17]	The patient handover as an entrustable professional activity: adding meaning in teaching and practice	The Netherlands	GME	Development	Expert consensus	Definition of EPA: patient handover based on expert opinion, educational policy documents, and competency catalogues
Jurd et al. (2015) [19]	Introducing a competency-based fellowship program for psychiatry in Australia and New Zealand	Australia/New Zealand	GME	Implementation	Educational case report	EPA-based residency curriculum in psychiatry
Kealy–Bateman et al. (2016) [18]	When should I attempt my centrally administered summative assessments in the RANZCP*** competency-based training program?	Australia New Zealand	GME	Assessment	Expert consensus	Recommendations for timing of assessments in residency training during EPA-based GME psychiatry curriculum
Weiss et al. (2016) [29]	Entrustable professional activities: enhancing meaningful use of evaluations and milestones in a psychiatry residency program	USA	GME	Implementation	Educational case report	Model to develop psychiatry residency EPAs and incorporate them into milestones framework
Klapheke et al. (2017) [33]	Third- and fourth-year medical student self-assessment in entrustable professional activities	USA	UME	Assessment	Cohort study	Changes in self-assessment (achieved levels of EPA performance) with regard to 13 core EPAs. Effect sizes for each EPA (range from 0.17 to 0.88) Assessment of EPAs with locally defined rubrics (anchored ratings of 1 through 5, targeted at fourth-year students), ratings 1 through 3 described progressive steps in development toward competence and entrustment. Rating 4 described an entrustable student, and rating 5 described a student or resident with development of competence beyond the entrustment level
Holt et al. (2017) [22]	The addiction recovery clinic: a novel, primary care-based approach to teaching addiction medicine	USA	GME	Development, implementation	Program evaluation	EPA-based addiction medicine curriculum for residents (total of seven specific EPAs). High satisfaction survey results of patients (84%) and trainees (qualitative)
		USA	UME	Assessment	Cohort study	

Table 1 (continued)

Authors (year)	Title	Country	Setting*	Main focus**	Study design	Main reported results
Klapheke et al. (2017) [32]	Assessing entrustable professional activities during the psychiatry clerkship					Pre-/post-clerkship self-assessment and clerkship director ratings of eight selected EPAs. Effect size range from 0.83 to 1.13
Shelton et al. (2017) [21]	Advancements in undergraduate medical education: meeting the challenges of an evolving world of education, healthcare, and technology	USA	UME	Development	Expert consensus	Implications of introducing EPAs in UME for psychiatry with main challenge of mapping EPAs to milestones Expert suggestions for developing specialty-specific EPAs at different levels of UME and GME psychiatry training
Fage et al. (2018) [20]	Competency-based medical education: objectives for a foundational emergency psychiatry experience	Canada	GME	Development	Expert consensus	Five entrustable professional activities (EPAs) identified for emergency psychiatry residency training Content validation through deliberate working group composition (several teaching hospitals of one university)
Grabovac et al. (2018) [25]	Standardizing training in mindfulness-based interventions in Canadian psychiatry post-graduate programs: a competency-based framework	Canada	GME	Development	Expert consensus	Three EPAs to prescribe and deliver a mindfulness-based intervention (MBI) Expert-based EPA development
Menezes et al. (2018) [23]	Does one size truly fit all? The COUPE undergraduate perspective on competency-based medical education in psychiatry	Canada	UME	Development	Expert consensus	Potential of CBME to structure curricula and increase feedback and direct observation for better accountability to the public EPA-based framework development with a national working group (Canadian Organization of Undergraduate Psychiatry Educators)
Sadhu et al. (2018) [30]	Lessons from the launch: program directors reflect on implementing the child and adolescent psychiatry milestones	USA	GME	Implementation	Educational case report	Expert recommendations on how to implement competency-based residency curricula
Young, Hasser et al. (2018) [24]	Developing end-of-training entrustable professional activities for psychiatry: results and methodological lessons	USA	GME	Development	Mixed-methods study	Ten end-of-training (residency) psychiatry EPAs Multi-method (working group, expert interviews, delphi process, survey) and national multistage development process
Young, Irby et al. (2018) [34]	Performance assessment of pharmacotherapy: results from a content validity survey of the	USA	GME	Assessment	Content-validity survey	26 items, validated for content, to describe performance of the EPA

Table 1 (continued)

Authors (year)	Title	Country	Setting*	Main focus**	Study design	Main reported results
	psychopharmacotherapy--structured clinical observation (P-SCO) tool					"management of psychiatric illness with medications"
Young, Rasul et al. (2018) [35]	Evidence for the validity of the psychopharmacotherapy--structured clinical observation tool: results of a factor and time series analysis	USA	GME	Assessment	Internal structure validity study	Internal reliability of performance assessment tool (Cronbach's alpha, range 0.74–0.9). Internal validity: affective tasks (alpha = 0.90), cognitive tasks (alpha = 0.84), and hard tasks (alpha = 0.74)
Koelkebeck et al. (2019) [16] *German article*	Einführung und Evaluation eines neuen Kurrikulums Psychiatrie und Psychotherapie [Introduction and Evaluation of a new Curriculum in Psychiatry and Psychotherapy]	Germany	UME	Implementation	Program evaluation	Improvement after new EPA-based curriculum in some OSCEs (ca. 2 points, maximum 22–27 points) no change in MC test
Schatte et al. (2019) [31]	Field Guide to Boot Camp Curriculum Development	USA	UME	Implementation, assessment	Educational case report	EPA-based boot camp curriculum in psychiatry. Pre–post-self-assessments of confidence with EPAs using a 5-point Likert scale for comfort level (mean ratings range from 3.2 to 4.5)
Vietz et al. (2019) [26]	Ward round competences in surgery and psychiatry-a comparative multidisciplinary interview study	Germany	GME	Development	Qualitative study (semi--structured interviews)	Description of competences necessary for performing ward rounds and frequency analysis of competencies for psychiatry and surgery respectively Qualitative study to explore EPA content

*Setting refers to undergraduate medical education (UME) or graduate medical education (GME). ** Main focus refers to whether EPA development (both individual EPA development and EPA curriculum framework development), EPA curriculum implementation, or EPA-based assessment was primarily addressed in the article. *MC* multiple choice, *OSCE* objective structured clinical examination. ***Royal Australian and New Zealand College of Psychiatrists

adapted to the local training environment in psychiatry (direct, proactive supervision, prescriptive supervision, reactive supervision, supervision at a distance, independent performance) [29], and Jurd et al. provided a blueprint for integrating competency catalogues with assessment structures for EPAs (summative entrustment based on multiple assessment tools) along training stages [19]. None of these reported program evaluation data.

We also found articles that described implementation strategies in the context of psychiatric subspecialties. One educational case report on child and adolescent psychiatry training emphasized the importance of considering faculty training, evaluation development, clinical competency committees, assessment validity, and the potential of EPAs to incorporate milestones assessment [30]. The authors also recommended taking the entire educational system with all stakeholders into account when planning for curricular reforms involving EPAs [30]. Allowing for enough faculty training time and, if necessary, familiarizing clinical competency committees with assessment strategies concerning EPAs [30] were also considered to be a key strategy. Another article reported an EPA-based curriculum implementation at the intersection of psychiatry and medicine in the context of addiction medicine [22]. This single-institution program evaluation study reported positive qualitative data in terms of trainees' satisfaction with an EPA-based graduate training curriculum [22].

In contrast to the graduate training context, some articles described smaller-scale curricular reforms involving EPAs on the clerkship or preclinical level in undergraduate medical education [16, 31]. One observational study of an EPA-based boot camp in psychiatry [31] described sustained improvement in self-comfort in clinical tasks such as performing

a mental status examination. Another observational study [16] reported that students evaluated an EPA-based UME curriculum reform positively. None of the articles described implementation strategies with regard to EPAs and educational transition phases (from preclinical to clinical or from undergraduate to graduate medical education) in psychiatry.

We found a small number of articles focusing on assessment of EPAs (n = 6, 30%). We found one article that reported expert recommendations and an assessment template for graduate training programs in psychiatry in New Zealand [18]. The authors formulated recommendations with regard to when specific EPAs should be assessed. Observed clinical activity (OCA) assessment templates with written feedback and a 9-point Likert scale based on developmental descriptors as well as case-based discussions, mini-CEX, professional presentations, and direct observation of procedural skills are used for summative entrustment (distant supervision). A single supervisor is expected to sign off entrustability for a given EPA.

Two articles described assessment tools and measures for EPAs in the psychiatry clerkship [32, 33]. In a cohort study [32], the authors selected eight out of 13 core EPAs as relevant for assessment in a psychiatry clerkship, and another cohort study of the same authors indicated that pre- and post-self-assessment of achievement levels did not change significantly for two core EPAs ("enter and discuss orders and prescriptions" and "obtain informed consent for tests and/or procedures") [33]. Educators used locally defined levels of performance with narrative rubrics to self-assess EPAs [33].

Another two articles examined the validity of a clinical assessment tool for the EPA "manage patient's psychiatric conditions with medications" [34, 35]. The reported internal reliability of the assessment tool (with 27 checklist items, rated with a 4-point scale based on rubrics for overall quality) for affective tasks (alpha = 0.90), cognitive tasks (alpha = 0.84), and hard tasks (alpha = 0.74) ranged from 0.74 to 0.90 and explained 50% of trainees' performance variance [35]. One educational case report on an EPA-based psychiatry boot camp curriculum used a 5-point Likert scale for students' self-assessment of confidence [31] and reported overall increases in students' confidence. None of the studies evaluated assessment of entrustability in correlation with clinical performance after entrustment or on the level of patient outcome measures.

Discussion

The present systematic review summarizes the available evidence for designing curricula based on EPAs in both UME and GME in psychiatry. We found that from a quantitative perspective, there is currently no strong evidence available that EPA-based curricula are positively correlated with educational learning outcomes on both the clinical knowledge and the clinical performance level. However, from a curricular design perspective, there is a small body of literature that EPA-based curricula have been implemented successfully in terms of satisfaction and self-comfort on the undergraduate and graduate level of medical education in psychiatry. Several articles provide rich qualitative and quantitative data on how to develop psychiatry-specific EPAs according to different training levels [17, 20–27]. Five articles reported experiences and program evaluation data of implementing EPA-based curricula [19, 22, 28–30], and six articles reported on qualitative and quantitative assessment strategies in the context of EPAs [18, 31–35]. We found a wide variance with regard to methodological rigor and use of theoretical concepts, e.g., using recommended templates for the description of EPAs and using entrustability as assessment criterion. Furthermore, the Ottawa criteria for good assessment, which include validity or coherence, reproducibility or consistency, equivalence, feasibility, educational effect, catalytic effect, and acceptability of a given assessment method, have not been addressed in any of the studies [4, 13].

The need to develop specialty-specific EPAs on the graduate training level [24] might also be relevant for the undergraduate education level [11] and in particular for specialty-specific clerkships. Studies on EPAs in UME [32, 33] in psychiatry seem to indicate that general EPA frameworks that have been developed in the USA [36] or in Switzerland [37] for UME cannot be easily applied to clerkships in psychiatry. Only a few studies used a rigorous methodological approach to ensure validity, reliability, and generalizability of EPA definitions [24, 26, 29]. Clinical educators in other specialties have started to develop subsets or nested EPAs [38, 39]. It seems more feasible to focus limited educational resources on fewer EPAs which align with UME and GME frameworks. Similar to the process described by Young et al [24] for developing end-of-training EPAs, we recommend developing psychiatry-specific (nested) EPAs for clerkship curricula. Including the patient perspective in the development process might help to account for patient safety components of selected EPAs [40].

The authors found a growing body of evidence indicating that EPAs can be effectively implemented in undergraduate and graduate medical education in psychiatry [22, 31]. However, there is only preliminary data for few EPAs with regard to educational outcomes [16, 22, 31–33]. Multiple factors play a role in the entrustment process (e.g., trainee's and supervisor's characteristics, educational alliance, contextual factors) [6], and the inconsistent use of EPA templates, assessment methods, and entrustability scales within psychiatry and across disciplines [3, 11, 12] make it currently difficult to synthesize the literature. The entrustment process in specific contexts, such as clerkships in psychiatry, needs to be better understood in order to inform assessment of (specialty specific) EPAs. Although the concept resonates intuitively with daily clinical practice, there is a scarcity of data on how to embed EPAs in programmatic assessment and how to assess

entrustment levels in a valid and reliable way for both low- and high-stakes entrustment decisions. The mental status exam has been included explicitly in more recent national EPA frameworks in UME [37] and for individual study purposes [32] as compared to the first published EPA frameworks in UME [41] (the EPA title changed from "gather a history and perform a physical examination" to "gather a history and perform a physical or mental examination" or "assess the physical and mental status of the patient," respectively) [32, 37, 41]. However, we did not find any study that commented on or explored the entrustment process relevant to clinical interviewing as a potential psychiatry-specific EPA in UME.

With regard to EPA advancement decisions in psychiatry, we found only one expert consensus article for GME [18], which could be used to inform programs that aim to transform to competence-based advancement. We did not find any articles that reported completely abandoning time-based training in psychiatry. Pilot data from pediatrics show that time-variable progression from UME to GME might be feasible, however require early specialty commitment of medical students and substantial time and personnel resources [42]. It remains unclear whether this approach is applicable to other specialties. Areas of further research include psychiatry-specific entrustment decision processes and entrustment decision handover between teaching hospitals, across educational phase (from UME to GME), or between educational systems (e.g., in the context of migrating health workforce).

To the knowledge of the authors, this is the first systematic review on EPAs in UME and GME in psychiatry. Limitations of this review include that the body of literature on EPAs in psychiatry is still small and diverse with regard to methods used. The lack of empirical controlled studies does currently not allow for meta-analyses of educational outcomes. Positive implementation evaluations might be biased through increased educational attention in the context of reforms and innovations on the outcome level.

Choosing a specialty-specific approach might lead to a selection bias in terms of missing relevant publications in other medical specialties. However, the authors decided that synthesizing the literature systematically from a specialty specific and longitudinal perspective would be more meaningful as a starting point for medical educators in the field of psychiatry. Furthermore, the concept of EPAs has been adopted predominantly in a positive way in the educational community, and we found no negative outcome studies or educational reports in this context.

In conclusion, we see an increasing trend with regard to quantity and quality of research on EPAs in psychiatry training on both the graduate and undergraduate medical education level. A number of content-validated EPAs for graduate medical education in psychiatry are available and could potentially be used across institutions and on an international basis.

Finally, there is promising but no conclusive evidence available with regard to quantifiable educational outcomes of using EPAs in psychiatric training. A better understanding of entrustment processes in psychiatry-specific clinical contexts is necessary.

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Compliance with Ethical Standards

This article does not contain any studies involving animals or human participants performed by any of the authors.

Conflict of Interest The authors declare that they have no conflicts of interest.

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