

The Functional Elements of Entrusted Professional Activities for Dental Educators: A Scoping Review

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The Functional Elements of Entrusted Professional Activities for Dental Educators: A Scoping Review

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Abstract

Background: Assessing the competencies of health professions educators presents significant challenges, leading to the suggestion of implementing Entrustable Professional Activities (EPAs) as a potential solution. EPAs refer to the authority granted to individuals to perform tasks with a specified level of trust and competence. The concept of EPAs emerged from the complexities of competency-based medical education and is relatively new in the field of dentistry. Most of the EPAs published focuses on the dental students and there is limited knowledge regarding EPAs specifically for dental educators.

Objective: Therefore, the rationale for this review is to systematically explore the existing literature on EPAs for dental educators.

Methods: In this paper, we present a scoping review protocol designed to systematically highlight the elements of EPAs for dental educators from their introduction in 2005 to 2024. This scoping review will be conducted in accordance with the Joanna Briggs Institute scoping review guidelines. The literature search will employ a three-step search strategy across four electronic databases (PubMed, Google Scholar, Scopus, ProQuest). Primary data from relevant studies published between 2005 and 2024 will be analyzed. The processes of literature search, study selection, and evidence charting will involve four independent reviewers. This scoping review aims to elucidate the extent, range and nature of the literature on EPAs for dental educators as assessed in the included resources.

Ethics and dissemination:

This review serves as a secondary research study, focusing on the existing literature regarding the characteristics of EPAs for dental educators. Therefore, ethical approval is not required. The review will systematically investigate the extent and scope of evidence and information available regarding EPA for dental educators, as well as the key elements of EPAs within higher education settings. The findings will be disseminated through academic journals and conferences aimed at the dental educators globally.

Results: The extracted data will be presented in tabular form and describe using descriptive statistics. A thematic approach will be employed, utilizing NVivo software for qualitative analysis. The data will be thematically organized according to the elements of the EPAs for dental educators and other related factors. A narrative summary of each element will be provided, and the elements of the EPA for dental educators will be mapped to their associated issues or any relevant emerging theme identified during the review.

Conclusions: By achieving these outcomes, we hope to establish a baseline data for Entrustable Professional Activities (EPA) tailored for dental educators in the literature, facilitating further development in this area. The outcome of this scoping review

will provide a foundational basis for the subsequent larger study aimed at developing a framework of Entrustable Professional Activities (EPAs) for dental educators. Clinical Trial: We tried to register via publication however the first attempt of publication failed with BMC Journal

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INTRODUCTION

Educators in the health professions, often bear significant responsibilities, as they must fulfil dual roles as both healthcare providers and educators. Health professions educators, are usually trained in their own clinical speciality and received very little training to be equipped as educators[1]. As we are all well aware, the educators are the primary instrument for knowledge transfer; however, little emphasis has been placed on the capabilities or competencies of the health professions educators. Question remains: How can we assess educators' competency?

EPA for Health Professions Educators

Despite the foundational work that has been undertaken in this area, assessing the competencies of health professions educators presents significant challenges. This has led to suggestion of the implementation of Entrustable Professional Activities (EPAs) as a potential solution.

The concept of EPA emerged from the complexities of competency based medical education (CBME)[2]. Entrusted professional activities (EPAs) were introduced with the concept of trust as a central element for effective execution. Initially proposed by Olle Ten Cate in 2005, EPAs are defined as tasks or responsibilities that can be entrusted to a trainee once they have achieved sufficient, specific competence to permit unsupervised practice[3]. EPAs represent units of professional practice, that are independently executable, observable and measurable in both their process and outcomes, making them suitable for entrustment decisions[4]. In short, EPAs serve as a means to translate competencies into practical application. EPA is hoped to link the actual teaching activities and support development of teaching[1].

EPA in Dentistry and Dental Educators

Dentistry, as a hands-on clinical program, would significantly benefit from a competency-based approach; thus, Entrusted Professional Activities (EPAs) are regarded as a valuable addition to dental training curricula. The concept of EPAs in dentistry has been addressed in numerous publications; however, significant emphasis has largely been placed on students rather than on the capabilities and competencies of educators. It is now imperative to shift the focus of EPAs towards educators, as they play a crucial role as a vital link between the curriculum and the students. This shift is essential to ensure a high-quality educational experience for all learners while maintaining accountability and consistency[5]

There is a growing recognition that for the dental health profession to fulfil its responsibility of training competent practitioners, emphasis must also be placed on the competencies of dental educators. In 1999, the American Association of Dental Schools reported that the quality of dental students' educational experiences is critically dependent on having an adequate number of dedicated faculty with expertise in both content and teaching methodologies[6]. Furthermore, in 2010, the UK Committee of Postgraduate Dental Deans and Directors (COPDEND) established guidelines for dental educators that can be utilized in their employment, development, and management[7].

There is however, a notable deficiency in published evidence regarding Entrustable Professional Activities (EPAs) for dental educators. Most existing literature on EPAs primarily focuses on student assessments, particularly within postgraduate dental training [8]. A scoping review conducted in 2023 examined EPAs within the broader framework of dental education; where it predominantly concentrated on the general aspects of EPAs in dentistry, without addressing the dental educators[9]. This proposed scoping review aims to specifically focus on the literature related to EPAs for dental educators. The findings of this review will establish a foundation for a larger study designed to develop a framework of EPAs tailored specifically for dental educators. While there is a notable gap in the literature on this topic, some evidence does exist. Therefore, a scoping review is essential to

systematically search for and report the current findings on EPAs for dental educators. This effort is intended to provide resources for dental educators to incorporate EPAs into training contexts and facilitate faculty development in assessing and enhancing the skills of their educators. This approach also aligns with the skill-based methodologies favoured by most universities.

OBJECTIVES AND RESEARCH QUESTIONS

This scoping review aims to explore the breadth and extent of evidence regarding EPAs for dental educators. The review will address this one research question: (1) What are the key functional elements of EPA for dental educators as described in the literature?

METHODS AND ANALYSIS

Study Design

This scoping review protocol will follow the methodological framework outline by Arksey and O'Malley[10] and in accordance with the Joanna Briggs Institute (JBI) guidelines for scoping reviews[11]. Any modifications to the methodological approach will be documented and described in the final scoping review report, according to the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guidelines[12].

Review Team

The review team consists of two qualified medical education experts, each holding a doctorate in medical education, possessing over five-years of experience in medical education teaching and conducting scoping reviews (MSBY and NSR). Furthermore, the team includes two experienced dental educators, one is the lead of dental education pathway in a renowned medical education centre (MAH) whilst another currently pursuing a PhD in medical education (NAB). A qualified senior librarian is also engaged from earlier on to ensure the correct implementation of Boolean search processes and the extraction of relevant literature (YMB).

Framework

Population	Concept	Context
Dental educators	Entrusted/Entrustable Professional Activities (EPA)	Elements of EPA

- 1) Concept: Entrusted/Entrustable Professional Activities (EPA)
- 2) Context: Elements of EPA
- 3) Population: Dental Educators

Inclusion Criteria***Types of articles***

The scoping review will examine published primary and secondary research that describes the Entrusted/Entrustable Professional Activities (EPAs) for dental educators globally utilizing four databases (PubMed, Google Scholar, Scopus and ProQuest). Resources outside of these databases will be excluded from the review.

Concept

This scoping review will encompass resources to capture the evidence, scope, range of EPAs for dental educators. This review will specifically focus on the EPAs pertinent to dental educators. Dental educators in this context will include individuals involved in the teaching at all levels of dental education, including both undergraduate and postgraduate programmes, regardless of geographical background. Additionally, this review will include articles that explore the various elements related to EPAs, including domains, characteristics, factors, skills or themes that shape the EPAs essential for effective dental educators. Resources that do not explicitly report on EPAs will be excluded from this review.

Context

The context of this review will encompass the elements or characteristics or domains or any other related themes that build or describe the EPAs for dental educators irrespective of their teaching level. This includes educators for both undergraduate and postgraduate education including clinical speciality training.

The components of the EPA for dental educators are grounded in the competencies being assessed, which include educational theories and principles, modes of education, learner issues, educational materials, instructional design, curriculum matters, evaluation, research, management, quality assurance, patient care and healthcare systems and professionalism[13]. Resources that do not pertain to the themes of the EPAs and articles unrelated to dental educators will be excluded.

Table 1: Inclusion and exclusion criteria utilized during the screening of the population (dental educators), concept (EPA), and context (element, domain, item, skills, characteristics) examined in the scoping review

	Inclusion	Exclusion
Population	<ul style="list-style-type: none"> Dental educators or Dental Lecturers Including either undergraduate and/or postgraduate level of educators Including both private and public education institutions 	<ul style="list-style-type: none"> non health/non medical/non-dental related educators
Concept	Entrusted Professional Activities (EPA)/Entrustable Professional Activities	-
Context	<ul style="list-style-type: none"> Element/Standard/domain/item/skills/ characteristics of dental educators 	-
Other	<ul style="list-style-type: none"> Published in the English Language Study design: All study type Study location: From all geographical locations Published between 2005 to 2024 Full Text 	<ul style="list-style-type: none"> Published in a language other than English Non full text

Table 2: The definition for the population, concept, context and characteristics for this scoping review is as below:

	Term	Definition
1	Entrusted professional activities	Tasks or responsibilities (to be mastered or certified) that can be entrusted to a trainee, once sufficient, specific competence is reached to allow unsupervised execution[4]
2	Dental Educator	Professional who teaches dental students and other dental professionals through formal clinical teaching in dental schools including through outreach programmes[5]
3	Element	One of the parts of something that makes it work, or a quality that makes someone or something effective - Cambridge Dictionary

Sources

This scoping review will encompass both quantitative and qualitative and is not limited to primary research. Since EPAs is relatively new to dentistry, grey literature is regarded as a crucial source of information[14]. Therefore, to ensure no significant data is overlooked, both primary research and secondary reviews including, but not limited to narrative reviews, scoping reviews, systematic reviews, and meta-analyses as well as published grey literature limited to conference proceedings, theses and dissertations, working papers, preprints, and protocols relevant to the EPAs of dental educators, will be systematically searched. The review will only include articles published in English between January 1, 2005 and October 1st 2024. Unpublished literature, website and blog posts will not be considered in this review, to maintain the authenticity and reliability of the data. A professional librarian was consulted regarding the search strategy and processes to ensure their appropriateness.

Search Strategy

This review will be conducted using a three-phase search strategy based on the recommendations of the JBI Scoping Review Guidelines[11]. The initial keywords will be identified and selected from the titles and index terms of relevant reviews. These keywords will be derived from the Medical Subject Headings (MeSH) and Education Resources Information Center (ERIC) databases and will be tested with various search terms using Boolean combinations. The search terms will be refined and adapted accordingly after multiple test searches.

The initial search will be based on the Table 3 below:

Table 3: Table of the key concepts, free text terms and controlled vocabulary terms.

	Concept 1	Concept 2
Key concepts	Entrusted Professional Activities	dental educators/ /dental education/dentistry

Free text terms/natural language terms Author keywords (from papers)	<ul style="list-style-type: none"> • Entrustable professional activities • Entrusted professional activity • Entrustable professional activity 	<ul style="list-style-type: none"> • Dental educator • Dental educators • Dental Education • Dentistry
Controlled vocabulary terms/ Subject Terms	Not Applicable	Indexterms/mesh/emtree MeSH (Education,Dental) (Dentistry)

The initial keyword search terms will be based on few key papers and further refined accordingly after few search. Keywords identified as ("Entrusted Professional Activities" OR "Entrustable Professional Activities" OR "Entrustable profession* activit*") AND ("Dental Educator*" OR "Dental Education" OR Dentistry), with time limit of 2005 to 2024.

A second search using all identified keywords and index terms will be performed across four databases, namely Scopus, Google Scholar, PubMed and ProQuest. Reference lists of eligible studies will be back searched as the third phase. The findings will be summarized in tabular form and a narrative synthesis.

Selection Process

The record selection will adhere to the predefined inclusion criteria with the search term monitored by the senior librarian (YMB). All identified sources will be exported into the Microsoft Excel, and duplicates will be removed. Once the reviewers are familiar with the selection process, the titles, abstracts and full-text articles of the included records will be screened according to the inclusion criteria. The selection process will be conducted independently by two researchers (NAB, NSR), with any disagreements addressed through the involvement of the other two reviewers (MSBY and

MAH) and further discussion, if necessary. Records that do not meet the inclusion criteria will be excluded from this study, and the reasons for exclusion will be documented. The search profile of the selection process will be reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) flow diagram[12].

Data Extraction

A standardised data extraction form is developed based on JBI guideline as in Appendix 1[11]. The following data will be extracted from each article:

- Title
- Authors and year of publication
- Country/Geographical area
- Study Design/Tool/Intervention
- Participant categories (Dental educators for undergraduate or postgraduate or both)
- Elements/characteristics of EPA
- Key findings
- Other relevant information, and remarks.

This data extraction will be performed independently by two reviewers to mitigate the risk of error. To ensure the reliability and consistency of the data extraction process, the reviewers will discuss their extraction strategies and pilot the process by extracting data from five records. Additionally, the reviewers will collaborate to discuss the outcomes of the data extraction. Any modifications in the data extraction form following the piloting will be reported.

Quality assessment

We will conduct a quality assessment of the included articles, using the tool developed by Kmet and colleagues[15]. While this step is not mandatory in a scoping review, we believe it will enhance the analysis. This tool provides standardized criteria for evaluating the methodological quality of primary research papers across various fields. The quality assessment will help identify potential

sources of bias, assess the rigor of study designs and provide insights into the overall quality of the evidence. Two reviewers will independently carry out the quality assessment, with any discrepancies resolved through discussion or consultation with the third and fourth reviewer.

Collating, Summarising and Presentation of Result

The extracted data will be presented in tabular form and describe using descriptive statistics. A thematic approach will be employed, utilizing NVivo software for qualitative analysis. The data will be thematically organized according to the elements of the EPAs for dental educators and other related factors. A narrative summary of each element will be provided, and the elements of the EPA for dental educators will be mapped to their associated issues or any relevant emerging theme identified during the review.

Expected outcomes

Through this scoping review, we aim to achieve the following outcomes:

- Provide a comprehensive and structured overview of the literature regarding Entrustable Professional Activities (EPAs) for dental educators.
- Identify the key functional elements of EPAs for dental educators from the available evidence.
- Contributes to the existing literature on EPAs for dental educators.
- The outcome of this scoping review will provide a foundational basis for the subsequent larger study aimed at developing a framework of Entrustable Professional Activities (EPAs) for dental educators.

Conclusion

By achieving these outcomes, we hope to establish a baseline data for Entrustable Professional Activities (EPA) tailored for dental educators in the literature, facilitating further development in this

area. We anticipate that the results of this scoping review will be of interest to a diverse array of stake holders, including educators, researchers, administrators, policy makers, and higher education institutions offering dental programmes.

Article Summary

This document outlines the protocol for a scoping review focused on Educational Practice Activities (EPAs) specifically for dental educators between January 1, 2005 and October 1st 2024 , involving reviewers from three distinct institutions.

Strengths and Limitations

- Strength: This is the first scoping review of Entrustable Professional Activities (EPAs) specifically tailored for dental educators.
- Strength: The review incorporated multiple expert reviewers, including a senior librarian, to ensure a high-caliber search.
- Limitation: This study includes only FOUR (4) databases.

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Author contributions

NAB conceived the idea. All co-authors constructed, read, and approved the final manuscript.

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Availability of Data and Materials

The datasets and/or any supplementary material used in this scoping review will be available from

the corresponding author upon request.

Declarations

Ethics approval and consent to participate

As this scoping review will include publicly available published material, ethical approval is not required.

Consent for publication

N/A

Competing interests

The authors declare that they have no competing interests.

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Supplementary Files

Untitled.

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