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# Functional Components of Emotional Intelligence for Developing Training Module for Medical Students: A Scoping Review Protocol

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## ABSTRACT

Emotional intelligence (EI) involves understanding and managing one's own emotions as well as those of others. This review explores the functional components of EI that can be developed among medical students, with the aim of informing the design of targeted training modules. The review will include studies involving undergraduate medical students, specifically those evaluating the outcomes of EI training. Both qualitative and quantitative research, including systematic reviews that meet the inclusion criteria, will be considered. A comprehensive search strategy will be applied across multiple databases and additional sources. Data extraction and analysis will be performed independently by multiple reviewers. The findings will be synthesised and presented using diagrams, tables, and narrative summaries, organised by research design, publication year, geographical location, and key results, to address the review questions and research objectives. This scoping review aims to enhance understanding of the trainable components of EI that are relevant to medical education and practice.

**Keywords:** *Emotional intelligence, Medical students, Scoping review, Medical education, Wellbeing*

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## INTRODUCTION

In recent times, increasing concern over the ethical conduct of doctors has led to a rise in complaints in various countries (1, 2). Whether these complaints arise from factors such as overcrowded hospitals, overworked healthcare providers, or a perceived lack of empathy among doctors, the matter has gained significant attention in academic discussions seeking to understand its root causes. Emerging literature highlights the growing disconnect between doctors and patients, particularly in terms of emotional engagement (3). It suggests that doctors should integrate patient-centred initiatives into their clinical practice. One widely proposed approach is to engage patients more actively and develop a deeper, empathetic understanding of their perspective, thereby strengthening emotional connection. In this regard, emotional intelligence (EI) has gained prominence as a concept that may help address ethical concerns in medical practice and potentially reduce patient complaints.

EI, as described by Salovey and Mayer (4), concerns the human capacity to recognise and comprehend both one's own emotions and the emotions of others. This concept underscores the complex interplay between intelligence and emotions, requiring individuals to perceive, understand, and regulate emotional states within themselves and in their relationships (5), while also using these abilities to guide problem-solving processes (4). The term gained further prominence through the work of several authors, most notably Goleman's influential 1995 publication "Emotional intelligence: why it can matter more than IQ" (6), which propelled EI into mainstream academic discussion. Goleman later aligned EI with an individual's ability to manage emotions effectively (7).

Various studies have shown a positive association between mental processes and EI (2, 8, 9). Salovey and Mayer (4) firmly believe that emotionally intelligent individuals are those who precisely sense their emotions and use combined, strategic approaches to regulate them in pursuit of their goal. Additionally, when emotions and intelligence are combined, individuals are better equipped to navigate everyday challenges effectively (6). Goleman similarly argues that both brains and emotions are important in shaping personality, further suggesting that the emotional mind may exert greater influence than the purely rational mind (6).

Goleman categorises EI into four broad themes: (a) self-awareness; (b) self-management; (c) social awareness; and (d) relationship management, which together comprise 18 underlying competencies (10). Self-awareness involves recognising one's emotions, evaluating strengths and weaknesses, fostering confidence, and facilitating emotional growth (11). Individuals' adept in self-awareness possesses a deep understanding of themselves and their surroundings (12). Self-management refers to the ability to regulate emotions, demonstrate adaptability, and maintain a positive outlook (11). Social awareness involves understanding group dynamics and service orientation, enabling individuals to empathise effectively with others (11). Finally, relationship management involves the application of effective communication skills to influence, collaborate, and resolve conflicts constructively (11).

Numerous studies have shown that high EI has a positively influences academic and professional success, strengthen social and interpersonal relationship, and help sustain these connections over time (7, 8, 13, 14). Individuals with strong EI also demonstrate better control over anger and exhibit lower levels of aggression (15). These findings are particularly relevant given the increasing challenges in hospital settings related to doctor-patient relationship, enhancing communication, promoting teamwork, supporting leadership qualities, and improving stress management among healthcare professionals (16–18).

Given the numerous benefits of EI for doctors, it is crucial to examine their EI levels, their understanding of EI, and how proficiency in this domain can be strengthened. Variations in EI levels have been interpreted in different ways: while some researchers view it as an inherent personality trait, others conceptualise EI as an ability that can be developed through training (18). This perspective suggests that EI can indeed be enhanced through targeted interventions, particularly among medical practitioners. The landscape of EI training in medical education is diverse, with various approaches used (19) such as foundation courses, workshops, seminars (e.g., by Motwani & Tondehal in India) (20), intensive resident coaching (for instance offered by Guseh et al. in Italy) (21), and video-modelling sessions (e.g., Donisi et al. 2022 in the U.S.) (22). These programmes typically focus on fostering skills such as empathy, emotional regulation, and stress management through interactive and practice-based learning environments.

Several studies suggest conducting reviews to pinpoint the specific components of EI, thereby enabling the design of tailored training modules for different groups (8). While previous studies highlight beneficial EI components, but lack evidence-based approaches tailored for medical students, leading to inconsistencies. A standardised framework integrating diverse components, theoretically informed, empirical evidence, and expert feedback is needed. Moreover, traditional classroom-based EI training is less effective for today's digitally savvy and diverse students; innovative methods are needed to engage students and improve healthcare (23). In this regard, online micro-credential frameworks have recently emerged as a unique opportunity in online training (24, 25), yet they remain underutilised in EI-related studies. Firstly, creating a comprehensive EI framework and then providing training through an online micro-credential approach represents a significant gap and is also highly effective. In summary, this review aims to uncover the key aspects of EI that are important for medical students and can be improved through training. By doing so, it seeks to provide researchers with valuable information on what should be included in an effective EI training programme.

## REVIEW TEAM

The review team comprises four experts from various academic backgrounds, identified by the initials US, IIH, NS, MSBY and NSR. Each member specialises in or has a sub-specialty in medical education.

Two independent reviewers, US and NS, will conduct the initial title and abstract screening. The full-text screening will also be carried out independently by the US and NS. Any discrepancies identified in either stage will be reviewed and resolved through discussion and consensus by IIH, MSBY and NSR.

## REVIEW QUESTION

The research question addressed in this protocol is: What are the functional components of EI that should be targeted for training medical students?

## INCLUSION CRITERIA

### Participants

This scoping review will examine all literature pertaining to undergraduate medical students, specifically focusing on studies investigating the impact of EI training. The review will exclusively focus on participants, with attention given to sampling students from all the years of undergraduate medical students.

## CONCEPT

The concept of EI, as envisioned by authors like Goleman and Salovey, is about the balancing and management of intellect and emotions, in terms of understanding, expression, and regulation of both our own emotions and those of others. More recently, there is a growing interest within academic literature suggesting that integrating EI into medical education curricula can have a positive impact on the professionalism of doctors (26), including reducing stress levels and psychological wellbeing (23). More so, importance is attached to academic intervention programmes designed to train medical students, preparing them with coping mechanisms to effectively navigate the many challenges generally encountered during their studies (23). This review will look at all the research on EI to examine which components of EI can be trained effectively and how that training in EI can impact medical students.

## CONTEXT

This study examines all the studies from around the world that explore how training in EI affects the EI skills of medical students. When choosing which studies to include, its focus is on those that specifically look at how EI impacts undergraduate medical students. This includes considering students from different backgrounds, like age, gender, ethnicity, and nationality, as well as from all years of study.

## TYPES OF SOURCES

We will use different types of research techniques to synthesise the topic of EI and explore the functional and trainable components for medical graduates, bringing together various ideas, theories, concepts, and scattered research findings to create a unified understanding. In this regard, to effectively map the literature across all study types, we will employ a combination of qualitative, quantitative, and mixed methods. To identify trends and outcomes, we will focus on the key findings of quantitative studies. Various study designs, such as surveys, cross-sectional studies, and experiments, including randomised controlled trials, are considered. In qualitative studies, we will direct our attention to studies using a variety of research designs that analyse either the EI training programmes or examine an in-depth analysis of the overall concept of EI. The advantage of utilising qualitative studies is that they will allow us to examine common themes and patterns. Similarly, for mixed-methods studies, we will separate their quantitative and qualitative components, and for review studies, we will focus on their key conclusions, identifying overarching themes and gaps. Any systematic reviews that meet our criteria will be included.

To locate these studies, we conduct searches across published papers and theses. We initiate our search with a basic query on Google Scholar using specific keywords. Subsequently, we tailor our search strategy for each database, ensuring the inclusion of relevant terms. Moreover, we inspect the reference lists of identified studies for additional relevant research. We focus on articles in English and any translations, primarily targeting studies published since 2013. Databases such as PubMed, Scopus, and Google Scholar are utilised to retrieve the necessary information.

## METHODS AND ANALYSIS

The protocol for this study has been formulated in accordance with the scoping review guidelines provided by the Joanna Briggs Institute (JBI) (27).

## SEARCH STRATEGY

This review adheres to the JBI scoping review guidelines (28). We start by selecting keywords from titles and index terms to find relevant reviews. These keywords, using Medical Subject Headings (MeSH), are tested with different search terms using Boolean combinations. We refine these initial keywords as needed. The initial keywords include terms such as "Emotional Intelligence" OR "EI" OR "Emotional Quotient" OR "EQ" AND "Functional Component" OR "Functional Elements" OR "EI Competencies" AND "medical students" OR "undergraduate medical students" AND "Training" OR "workshop" OR "module" OR "curriculum". Then, a thorough search across all selected databases such as Google Scholar, Scopus, and PubMed, were performed using all the identified keywords and index terms.

To uphold data quality, our focus will remain on studies that are both reliable and methodologically sound. By excluding grey literature, such as unpublished reports, white papers, and training materials, along with books and book chapters that are not easily accessible, we ensure that only relevant, accessible, and high-quality research is included in the review. This filtering process helps us eliminate studies that are less credible or hard to access, allowing us to concentrate on robust, trustworthy findings. Finally, we check the reference lists of all included reviews to ensure we have not missed any relevant studies.

## SELECTION OF SOURCES

After the initial search, all retrieved articles and citations will be sorted in Mendeley, ensuring swift removal of duplicate entries. Subsequently, the reviewers will pilot the test titles and abstracts, followed by individual screening against inclusion and exclusion criteria. Reasons for excluding not meet the criteria will be reported, using a PRISMA-ScR flow diagram as illustrated in Figure 1.

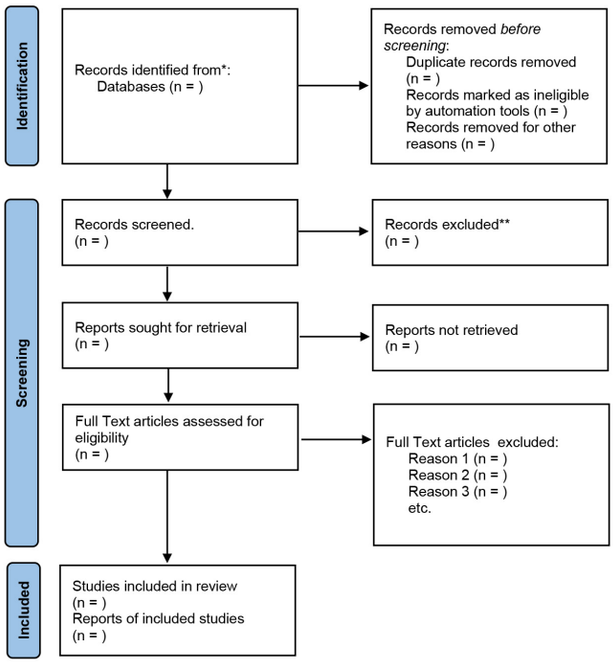


**Figure 1:** Preferred Reporting Items for Systematic reviews and Meta Analyses extension for Scoping Reviews (PRISMA-ScR) 2020 flow diagram (29).

## DATA EXTRACTION

During the data extraction phase of this review, two independent reviewers will extract data from the included papers using a customised data extraction tool. This tool, developed by the author, will gather information on participant details, concepts, contexts, study methodologies, and main findings related to the review question. The Appendix serves as the preliminary extraction form, subject to refinement as needed throughout the data extraction process, with all revisions documented in this review. In case of disagreements between the reviewers, resolutions will be sought through discussion or consultation with additional reviewers. If there are instances of missing or supplementary data, authors will be contacted for clarification.

## DATA ANALYSIS AND PRESENTATION

The findings from the extracted data will be presented visually using diagrams, tables, and charts, in line with the objectives of this scoping review. These visual aids will help illustrate various aspects such as the distribution of studies by publication year, countries where the research was conducted, approaches to EI training, and the aims and objectives of each study. Each visual representation will come with a summary to explain its significance. To complement these visuals, detailed explanations will be provided. These explanations will clarify how the findings relate to the review questions. They will cover the objectives, aims, results, and methodologies of each study relevant to our review. Furthermore, the reviewed literature will be categorised under specific headings. These categories will include the type of research design, publication year, geographical location, outcomes, main key findings, and characteristics of the study population. This organisation will help address the specific review questions and objectives in a clear and structured manner.

## CONCLUSION

In academic circles, it is widely acknowledged that teaching EI to medical students is essential for boosting their professionalism and reducing wellbeing issues. Yet, there is a notable absence of evidence-based approaches to train them in managing their emotions and understanding others. This scoping review seeks to bridge these gaps by pinpointing the specific aspects of EI crucial for medical graduates, drawing insights from diverse research sources. We will delve into global studies on EI training for medical students, aiming to grasp its impact across various backgrounds and cultures. This analysis will guide us in crafting a practical and effective training approach tailored specifically for medical students. By identifying the key elements of EI and effective methods, we aim to deepen our understanding of EI and enhance curriculum development in medical education.

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## APPENDIX: DATA EXTRACTION INSTRUMENT

Only append the JBI or non-JBI data extraction instrument if the standardised tool has been modified in any way, otherwise simply cite the tool used in the text. Any modifications made to the instrument should also be described in the text.

| Study Details | |
|---|---|
| Author/year | |
| objectives | |
| Participants (characteristics/ total number) | |
| Setting/context | |
| Description of Interventions/ phenomena of interest | |
| Search Details | |
| Sources searched | |
| Range (years) of included studies | |
| Number of studies included / | |
| Types of studies included | |
| Country of origin of included studies | |
| Appraisal | |
| Appraisal instruments used | |
| Appraisal rating | |
| Analysis | |
| Method of analysis | |
| Outcome assessed | |
| Results/Findings | |
| Significance/direction | |
| Heterogeneity | |
| Comments | |