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Evaluating the effectiveness of educational interventions in promoting emotional intelligence in health professionals. A protocol for systematic review

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ADMINISTRATIVE INFORMATION

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Conflicts of interest - None declared.

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INTRODUCTION

Review question / Objective Literature reveals that emotional intelligence is essential for health professionals to perform their job effectively and for quality patient care. In addition to discipline expertise, the skills needed for health professionals include communication, collaboration, empathy and teamwork that comes under the umbrella of emotional intelligence (EI)(1). The aim of this systematic review is to evaluate the educational interventions that are used to enhance EI or its domains in health professionals. We used the "PICO" framework to formulate the research questions:

P- Health professionals (medical doctors, dentists, nurses, pharmacists, physiotherapists, postgraduate students and postgraduate residents from medical, dental, nursing, pharmacy and physiotherapy disciplines). I- Educational intervention. C - Non-intervention group/control group (where applicable). O- Impact on EI or its

domains. To this end, the proposed systematic review will address the following questions:

i- Which educational interventions are used to enhance emotional intelligence or its domains in health professionals? ii- What is the impact of these interventions on emotional intelligence or its domains of health professionals?

Rationale Healthcare professionals, in addition to being competent graduates from their respective programs need to become transformational academic leaders to fulfill additional leadership responsibilities in future. These professionals must acquire competencies in supporting and mentoring their junior colleagues/trainees, fostering a positive learning environment, and maintaining their professional development through self-assessment. All these skills come under the construct of EI. Emotional intelligence is considered an essential component of residents' leadership. It is positively associated with job satisfaction and clinical se, predicts residents'

well-being and it decreases burnout(2). The EI competencies identified for health professionals' leadership are self-awareness, self-management, empathy, effective listening, respect and teamwork capabilities(3). Emotional intelligence has appeared as a core professional competency based on evidence demonstrating its association with enhanced communication, teamwork efficiency(4), and reduced occupational stress among healthcare providers(5). The EI domains like self-awareness, self-management, empathy, leadership, teamwork, adaptability, and emotional regulation are critical for addressing complex interpersonal interactions and emotionally charged clinical encounters(6). The postgraduate period is particularly critical, as health professionals interacting with patients face intense workload, high expectations, and emotionally challenging situations requiring enhanced emotional regulation (7). Existing literature highlights the growing use of educational interventions to develop EI competencies in the health professions. These include structured workshops, simulation-based training, reflective writing, mindfulness and stress-management programs, coaching, mentorship, interprofessional education, and communication-skills training(8-10). Despite these advancements, the evidence of their effectiveness remains mixed and methodologically diverse. Studies vary in terms of targeted EI domains, instructional design, delivery method, duration, and assessment tools used to measure EI outcomes(11). There is a need for a comprehensive review to identify which interventions most effectively enhance EI and its domains among health professionals. This systematic review will address gaps and provide guidance to curriculum developers, faculty developers, and healthcare institutions seeking to include EI training within postgraduate education and faculty development. The review will also assess the impact of EI interventions beyond EI score improvements by examining its domains like well-being, stress management, teamwork, communication and collaboration and conflict management. Chris Powell conducted a systematic review and meta-analysis on the effectiveness of EI training interventions among healthcare workforce including nurse managers, support staff, undergraduate and postgraduate students(12). The meta-analysis included only longitudinal studies from January 1995 to August 2022. Our review is focused on postgraduate and practicing health professionals from medical, dental, nursing, pharmacy and physiotherapy disciplines. The review will include all interventional studies promoting EI or any of its domains. The search period spans January 2015 to October 2025, capturing the significant recent surge in EI

research, particularly the emphasis observed since the COVID-19 pandemic. A systematic synthesis of existing studies is essential to identify effective educational strategies, understand their impact on different domains of EI. This review will contribute to evidence-based curriculum and faculty development in health professions education. It will provide information to institutional policy makers to create a culture of promoting EI training for better collaborative healthcare workforce.

Condition being studied Emotional intelligence (EI) is defined as the ability of a person to regulate his or her own and others' emotions, to differentiate between them and to use the information to manage their thoughts and activities(13). It is a set of abilities or competencies that enable a person to motivate oneself, control emotions, regulate moods, empathize and to hope(14). There are four commonly used EI models. The Mayer-Salovey Model: This model defines EI construct as the ability of a person to perceive, use, understand and manage emotions to guide his/her thinking. It is also known as the Ability Model and the four-branch model of emotional intelligence(15). The Bar-On Model: It includes non-cognitive, social skills as well as emotional skills that influence one's capability to cope with environmental demands and pressures. According to Reuven Bar-On, it is emotional-social intelligence(16). The Goleman Model: It focuses on personal and social competencies that contribute to people's performance at workplace. It describes how basic emotional skills facilitate success of a person in life. It is also called as The Emotional Competencies Model(17). Trait Emotional Intelligence model: Petrides and Furnham (2001) developed the model which is combination of emotionally related self-perceived abilities and moods and are evaluated through questionnaires and rating scales(18). With the rapid changes in healthcare industry, it is becoming important to incorporate EI in the culture of healthcare industry. Healthcare professionals need to be trained in EI skills by personal reflection, practice and guidance (19). This results in a positive work culture where support and inspiration results in high productivity and the other professionals feel confident to perform. According to Reuven Bar-On, EI is the ability of individuals to effectively manage personal, social and environmental change by rationally and adaptably coping with the current situation, solving problems and making decisions accordingly. For this they need to be optimistic, positive and self-motivated to manage emotions that help them to deal with the situation (20). Research has shown that training to enhance EI is essential for health professionals educators across

different disciplines for leadership, communication and collaboration, teamwork, professionalism, coaching and mentoring (21). Therefore, it's important to develop training strategies to cultivate EI in health professionals who serve both in clinical and academic settings.

METHODS

Search strategy We will be conducting this systematic review according to the AMEE guidelines. The review will be reported using the Structured Approach to the Reporting in the healthcare Education of Evidence Synthesis (STORIES) statement(22). We developed the search strategies according to the guidelines for each database. We used MESH and Boolean operators to refine the search. Filters of period from Jan 2015 to Oct 2025 and English language were applied.

PubMed: (("emotional intelligence") AND (("education* intervention" OR "training" OR "teaching method*" OR "pedagog*" OR "instruction*" OR "strateg*"))) AND (("postgraduate health personnel" OR "postgraduate health professional*" OR "medical doctors" OR "dentist*" OR "pharmac*" OR "physiotherap*" OR "nurs*"))

Web of Science: "emotional intelligence" (All Fields) AND "education* intervention" OR (training) OR "teaching method*" OR (pedagog*) OR (instruction*) OR (strateg*) (All Fields) AND "postgraduate health personnel"OR "postgraduate health professional*" OR "medical doctors" OR (dentist*) OR (pharmac*) OR (physiotherap*) OR (nurs*) (All Fields) and Review Article (Exclude – Document Types) and Open publisher-invited reviews (Exclude) and Article or Proceeding Paper or Early Access (Document Types) and English (Languages) and Book Chapters or

Scopus: TITLE-ABS-KEY ("emotional intelligence") AND TITLE-ABS-KEY ("education* intervention" OR "training" OR "teaching method*" OR "pedagog*" OR "instruction*" OR "strateg*") AND TITLE-ABS-KEY ("postgraduate health personnel" OR "postgraduate health professional*" OR "medical doctors" OR "dentist*" OR "pharmac*" OR "physiotherap*" OR "nurs*") AND PUBYEAR > 2014 AND PUBYEAR < 2026 AND (EXCLUDE (SUBJAREA , "BUSI") OR EXCLUDE (SUBJAREA , "COMP") OR EXCLUDE (SUBJAREA , "ECON") OR EXCLUDE (SUBJAREA , "ARTS") OR EXCLUDE (SUBJAREA , "ENGI") OR EXCLUDE (SUBJAREA , "DECI") OR EXCLUDE (SUBJAREA , "MULT") OR EXCLUDE (SUBJAREA , "BIOC") OR

EXCLUDE (SUBJAREA , "ENER") OR EXCLUDE (SUBJAREA , "AGRI") OR EXCLUDE (SUBJAREA , "PHAR") OR EXCLUDE (SUBJAREA , "MATH") OR EXCLUDE (SUBJAREA , "PHYS") OR EXCLUDE (SUBJAREA , "MATE") OR EXCLUDE (SUBJAREA , "CENG") OR EXCLUDE (SUBJAREA , "EART") OR EXCLUDE (SUBJAREA , "CHEM") OR EXCLUDE (SUBJAREA , "VETE")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))

EBSCOhost: AB ("emotional intelligence") AND AB (("education* intervention" OR "training" OR "teaching method*" OR "pedagog*" OR "instruction*" OR "strateg*")) AND AB (("postgraduate health personnel" OR "postgraduate health professional*" OR "medical doctors" OR "dentist*" OR "pharmac*" OR "physiotherap*" OR "nurs*"))

ScienceDirect: ("Emotional intelligence") AND ("teaching") AND (" health professionals").

Participant or population Health professionals (medical doctors, dentists, nurses, pharmacists, physiotherapists, postgraduate students and residents from medical, dental, nursing, pharmacy and physiotherapy disciplines.

Intervention Any educational intervention of any duration designed to enhance emotional intelligence and its domains in health professionals.

Comparator Non-intervention group/control group (where applicable).

Study designs to be included We will be considering quantitative, qualitative, and mixed-method studies to be included in the review. The following study designs will be included in the systematic review:A: Descriptive (Cross-sectional, qualitative)B. Experimental or quasi-experimental (non-randomized controlled trials) C. Single group pretest-posttest or posttest only D. Analytic observational (cross sectional, case control, cohort).E. Randomized controlled trials.

Eligibility criteria The inclusion criteria described below are based on the PICOS: Population- Health professionals (medical doctors, dentists, nurses, pharmacists, physiotherapists, postgraduate students and residents from medical, dental, nursing, pharmacy and physiotherapy disciplines). Those who have completed their bachelor degree and are either residents, postgraduate students, clinicians and academicians and are working in

hospitals, clinics, universities and nursing homes. Intervention- Educational interventions used to enhance emotional intelligence and/or its domains like self-awareness, self-management, leadership, teamworking, communication and collaboration, stress management, conflict management, change management, empathy, adaptability, self-control and assertiveness. Articles in which the outcome establishes the impact of intervention on EI or its domains. Comparator- Non-intervention group/ control group (where applicable)

Outcome- Impact on EI and/or its domains.

Study Types- Study types: Quantitative, qualitative, and mixed method studies with a well-established outcome will be included for time frame of Jan 2015 to Oct 2025. Only peer reviewed original articles in English language available in full text form will be considered for inclusion. The exclusion criteria include:

- Articles that exclusively involve undergraduate students, healthcare technicians, staff workers, midwives and nurse/healthcare managers.
- Articles written in languages other than English.
- Articles where the outcome of instructional strategy does not clearly establish any influence on EI or its domains.
- Grey literature including conference proceedings, theses and dissertations, newsletters, informal communications, and pre or post print articles, and non-empirical research.

Information sources A systematic search for relevant articles will be carried out in the following databases: i: Web of Science; ii: Scopus; iii: ScienceDirect; iv: EBSCOhost; v: PubMed - In addition to electronic search, hand search for titles and abstracts will be done for the last five years from 2020 to 2025 in the following journals: Academic Medicine, Medical Teacher, and Medical Education. Finally, we will review the bibliographies of the included articles to identify other relevant articles.

Main outcome(s) The aim of this systematic review is to evaluate the educational interventions that are used to enhance emotional intelligence and/or its domains in health professionals. The results of the review will be structured according to research questions and will be qualitatively synthesized. The outcomes of the review will provide guidance to curriculum developers, faculty developers, and healthcare institutions seeking to include EI training within health professions education.

Additional outcome(s) Not applicable.

Data management A data extraction form will be devised to extract relevant information including participants' information, educational intervention used, underpinning EI framework, EI measuring tools and the results and outcome focusing on the impact on EI and its domains in health professionals. Two reviewers will extract data independently and disagreements will be resolved by reaching a consensus or consulting a third reviewer. Endnote will be used to save articles for systematic review.

Quality assessment / Risk of bias analysis The methodological quality of all included articles will be assessed by two reviewers independently using the Medical Education Research Study Quality Instrument (MERSQI) for quantitative studies(23), and Joanna Briggs Institute's critical appraisal checklist for qualitative research(24). Any disagreements will be sorted out by discussion or consultation with another author with expertise in methodology.

Strategy of data synthesis A data extraction form will be devised to extract relevant information including participants' information, educational intervention used, underpinning EI framework, EI measuring tools and the results and outcome focusing on the impact on EI and its domains in post graduate health professionals. The adapted data extraction form will be pilot tested with 2-3 studies before starting the actual data extraction to identify ambiguous definitions and other areas that may require further clarification(25). Two reviewers will extract data independently and disagreements will be resolved by reaching a consensus or consulting a third reviewer. Since the research questions can be addressed by both quantitative and qualitative research designs, the convergent integrated approach will be followed for its synthesis and integration.

Subgroup analysis Not applicable.

Sensitivity analysis The studies that score very low on quality assessment will be excluded from final inclusion. Since there are no cut-off values given for the quality assessment tools used in this review, therefore, the decision to include or exclude a study on low methodological quality will be researchers' choice with expert opinion from the authors' team.

Language restriction Only articles published in English language will be considered for inclusion.

Country(ies) involved Malaysia, Pakistan.

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Keywords Emotional intelligence, EI domains, health professionals, educational intervention.

Contributions of each author

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