



Interventions Aimed At Improving Emotional Intelligence in Nursing Students: An Integrative Literature Review

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Abstract

Emotional intelligence (EI) is increasingly recognized as crucial in nursing education and practice, driving this integrative review on interventions improving EI in nursing students. A comprehensive literature search through CINAHL, ERIC, Cochrane, and PsycINFO, supplemented by hand searching, included EI-focused studies for nursing students, assessed using the Johns Hopkins Nursing Evidence-Based Practice Checklist. Seventeen studies from eight countries (2015–2024) revealed diverse interventions—experiential learning, mindfulness, self-care training, lectures, digital storytelling, and simulation-based approaches—demonstrating consistent effectiveness in multiple specialties. Mindfulness and self-care significantly improved EI; effectiveness was not duration-dependent, underscoring content and delivery over length. While experiential learning holds value, integrating mindfulness, self-care, and reflective practices may offer stronger EI benefits. Future research should employ larger randomized controlled trials with standardized EI measures and longitudinal designs to assess lasting impacts. Nursing education programs should adopt a holistic EI approach, prioritizing both personal growth and professional competence.

Keywords: *emotional intelligence, nursing students, interventions, strategies, simulation, mindfulness, nursing education, role play.*

Emotions have long been considered obstacles to rational decision-making, often viewed as hindrances rather than assets. However, contemporary perspectives have shifted toward recognizing the intrinsic value of emotions in human cognition and behavior. This paradigm shift, credited to psychologists of the 20th century, has led to extensive research on the interplay between emotions and thoughts (Kurdi & Hamdy, 2020).

The concept of emotional intelligence (EI) has significantly evolved since the mid-20th century. Building upon earlier ideas like social intelligence introduced by E.L. Thorndike in 1920 and David Wechsler's emphasis on non-cognitive factors in predicting life success in 1940,

EI has become a crucial area of study (Sfetcu, 2020). While the term "emotional intelligence" appeared in academic literature during the 1960s, it gained substantial momentum in the 1980s and 1990s. Howard Gardner's 1983 theory of multiple intelligences expanded the understanding of human capabilities, including interpersonal and intrapersonal intelligences (Sfetcu, 2020). Wayne Payne's 1985 doctoral thesis further developed the concept, contributing to its academic growth.

In the 1990s, Peter Salovey and John Mayer provided a more formal definition and framework for EI, describing it as the ability to perceive, understand, manage, and use emotions effectively (Kurdi & Hamdy, 2020). The popularization of EI is largely attributed to Daniel Goleman, who brought the concept into mainstream awareness (Sfetcu, 2020). This surge in interest led to the development of various models and measurement tools, sparking debates on how to define the concept. Reuven Bar-On introduced one of the first scientifically validated measures of EI in 1996, assessing areas such as interpersonal skills, adaptability, and stress management (Sfetcu, 2020).

The multifaceted definition of EI and numerous measurement scales have created a lack of consensus on its definition (Dugué et al., 2021; Saikia et al., 2023). According to MacCann et al. (2020), to bring clarity to the phenomenon, researchers have distinguished between two primary measurement models: ability scales and rating scales. Ability scales require individuals to demonstrate knowledge or process emotion-related information, while rating scales ask individuals to self-assess their emotional capabilities. These different measurement approaches have been found to capture distinct constructs, with only weak correlations between them. Theoretical models of EI are similarly divided into two main categories: mixed models and ability models. Mixed models incorporate a broad range of constructs, including emotion-related abilities, character traits, and motivational elements. In contrast, ability models conceptualize EI as a cognitive ability similar to verbal or quantitative abilities, but with emotions as the content domain. This complexity has important implications in fields where EI is crucial, such as nursing. In the nursing profession, EI plays a vital role in managing the emotional demands of patient care, communication, and teamwork.

Background

Nursing is a profession known for its demanding responsibilities and rigorous training, which brings with them emotional challenges. Research conducted by Qeshta and Samikon (2021) reveals that nurses have a higher likelihood of experiencing stress, anxiety, and depression compared to those working in other professions. Nurses who possess higher levels of EI can effectively manage their emotions, provide empathetic support to patients and their families, and navigate complex clinical settings, ultimately improving the quality of care and safeguarding their own physical and mental health (Hajibabae et al., 2018; Lina et al., 2022).

Emotional intelligence is a crucial component in nursing education and practice, enhancing various aspects of nursing students' development, including empathy, critical thinking, and the ability to provide individualized care (Batan, 2024; Çulha & Acaroğlu, 2018). Studies have shown positive associations between EI, happiness, perceived caring behavior, and job satisfaction among nursing students, emphasizing the need for educators to adapt teaching

methodologies to incorporate EI training into curricula (Baghdadi, 2023; Shrestha & Mandal, 2021).

Integrating EI programs into nursing education can reduce burnout, mitigate psychosocial risks, and enhance nurses' ability to handle situational stressors and workplace conflicts (Başoğul & Özgür, 2016; Lu & Shorey, 2021; Sanchis-Giménez et al., 2023). EI acts as a mediator between empathy and humanistic care ability, underlining its significance in developing students' caring abilities and professional values (Lina et al., 2022). Given the increasing complexity of healthcare environments and client expectations, incorporating EI concepts into nursing curricula is essential to meet the emotional demands of the profession (Başoğul & Özgür, 2016; Shrestha & Mandal, 2021).

Nursing students with higher levels of EI are better equipped to establish productive relationships with patients and their families (Hajibabae et al., 2018). Studies have shown that EI positively influences coping strategies among nursing students, allowing them to handle stress more effectively and adopt active and efficient coping mechanisms (Kim & Han, 2015). During challenging times such as the COVID-19 pandemic, EI has been found to play a crucial role in mitigating perceived stress and enhancing self-efficacy among nursing students (Varughese & Rema, 2021). Moreover, EI is a predictor of clinical competencies in nursing students, emphasizing its importance in enhancing overall performance (Belay & Kassie, 2021).

Purpose of the Review

While current literature has focused on EI in the adult population (Kotsou et al., 2019) and in nursing more broadly (Saikia et al., 2023), there is an increasing interest in the interventions aimed at improving EI among undergraduate nursing students (Napolitano et al., 2023). This review seeks to build upon these studies by evaluating the effectiveness of various EI training methods and exploring the types of interventions being implemented in nursing education. The aim is to identify best practices, gaps in current knowledge, and potential areas for future research. Ultimately, this review aims to provide valuable insights for nursing educators, curriculum developers, and researchers to enhance the emotional competencies of nursing students, thereby contributing to the improvement of patient care and the overall well-being of future nursing professionals.

Methods

A literature search was conducted using multiple databases: CINAHL, ERIC, Cochrane, and PsycINFO, and Google Scholar. The search strategy employed a combination of keywords related to the population of interest (nursing students) and the intervention (EI training).

The specific search terms used were:

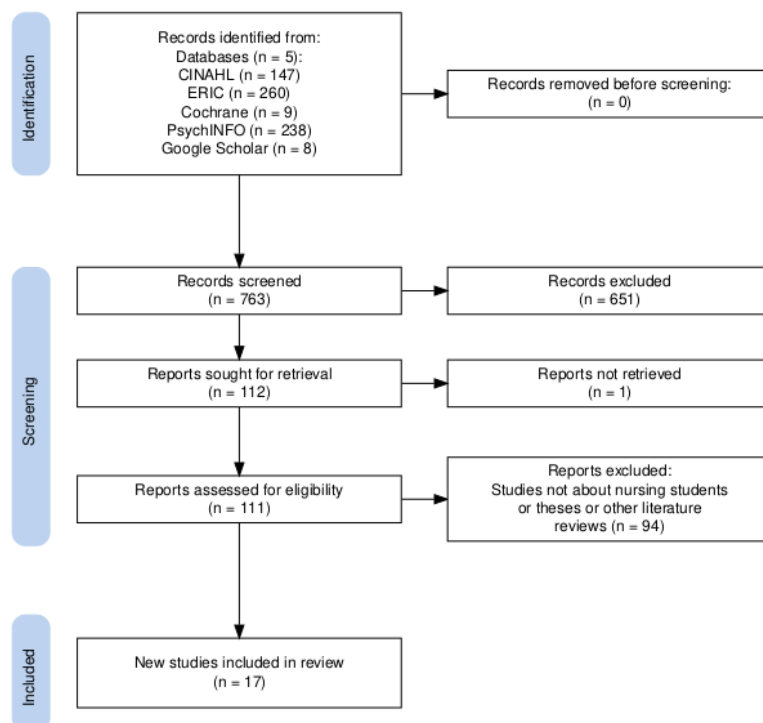
- (undergraduate students OR nursing students OR student nurses OR college students OR university students OR undergraduate student)
- (teaching methods OR teaching approaches OR teaching strategies OR instruction OR problem-based learning OR simulation training OR simulation learning OR (role-play OR roleplay OR role play) OR learning strategies OR intervention)
- (emotional intelligence OR emotional competence OR emotional awareness OR emotional literacy)

These terms were combined using Boolean operators to create a comprehensive search string.

Inclusion and Exclusion Criteria

Studies were included if they focused on interventions aimed at improving EI in nursing students. All types of studies were considered, with the exception of these and other literature reviews. No time constraints were applied to the publication dates of the studies. Studies focusing on undergraduate students other than nursing students were excluded. After screening titles, abstracts, and full texts based on the inclusion and exclusion criteria a final set of 17 studies was selected for the review.

Quality Assessment



The Johns Hopkins Nursing Evidence-Based Practice Checklist was used to assess the quality of the included studies (Dang et al., 2022). This tool was used to evaluate the strength and quality of evidence in nursing research. Data from the selected studies were extracted and synthesized to address the research question. The synthesis process involved identifying common themes, interventions, and outcomes related to EI training in nursing students. Zotero software was used to manage citations and organize the bibliographic information of the included studies. The review process involved two reviewers, an undergraduate nursing student and a professor with a doctorate in nursing, enhancing the rigor and reliability of the study selection and analysis. The review process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, specifically using the PRISMA flowchart to document the study selection process.

Results

Table 1

Intervention details and population demographics of the included studies.

Authors	Country	Intervention method	Intervention Duration	Population Size	Years of study nursing students were in
(Beauvais et al., 2019)	USA	Psychodrama, discussions	2hr/session for 6 sessions	79	“Traditional UG students”
(Castelino & Mendonca, 2022)	India	Role-play, discussion, lecture, motivational videos	2hr/day for 5 days	60	3rd year
(Choi et al., 2015)	Korea	Lecture and presentation	1 session/week for 8 weeks	87	2nd year
(Erkayiran & Demirkiran, 2018)	Turkey	Role-play, presentation, Q&A	60-75 min/session for 10 sessions	72	“Freshman”
(Esteban-Burgos et al., 2024)	Spain	Simulation, video, movie sharing and debate	6 weeks	264	2nd year
(Goudarzi et al., 2018)	Iran	Discussions, written material	2 sessions of 1hr/week for 6 weeks	60	2nd & 3rd year
(Kamel et al., 2018)	Egypt	Role-play, discussion, brainstorming	90min/week for 4 weeks	58	4th year
(Khedr et al., 2023)	Egypt	Presentation, written material (companion booklet) and videos.	60-90min/week for 8 weeks	120	2nd, 3rd, 4th year
(Lee and Kim, 2022)	Korea	Emotive role-play	11hrs in 3 days	83	3rd year
(Orak et al., 2016)	Iran	Role-play, lectures,	2hr/week for 8 weeks	66	1st year

		discussion			
(Ozturk, 2023)	Turkey	Mindfulness-based stress reduction	90min sessions; 2 sessions/week for 4 weeks	59	1st year
(Petty et al., 2020)	United Kingdom	Storytelling, reflective practice	once	137	All years
(Ramadan et al., 2020)	Egypt	Simulation, discussion, lecture	30-45min/week for 12 weeks	100	4th year
(Ruiz-Fernández et al., 2022)	Spain	Simulation	2 sessions of 2 hrs each	135	2nd year
(Sisman & Buzlu, 2022)	Turkey	Psychodrama	1.5-2hr/week for 10 weeks	120	2nd year
(Teskereci et al., 2020)	Turkey	Role-play, debate, movie sharing	2hrs/week for 14 weeks	73	1st year
(Yoong et al., 2023)	Singapore	Simulation	2 sessions, each 2hrs, 1 week apart	135	3rd year

Study Characteristics

The 17 studies included in this literature review were published between 2015 and 2024, originating from eight countries: Egypt (Kamel, 2018; Khedr et al., 2023; Ramadan et al., 2020), India (Castelino & Mendonca, 2022), Saudi Arabia (Khedr et al., 2023), Singapore (Yoong et al., 2023), South Korea (Choi et al., 2015; Lee & Kim, 2022; , Spain (Esteban-Burgos et al., 2024; Ruiz-Fernández et al., 2022), Turkey (Erkayiran & Demirkiran, 2018; Ozturk, 2023; Sisman & Buzlu, 2022; Teskereci et al., 2020), the United Kingdom (Petty et al., 2020), and the United States (Beauvais, 2019)

Regarding research design, 12 studies were quasi-experimental involving non-equivalent control groups and pre-posttest design (Beauvais, 2019; Castelino & Mendonca, 2022; Choi et al., 2015; Erkayiran & Demirkiran, 2018; Goudarzian et al., 2019; Kamel, 2018; Lee & Kim, 2022; Orak et al., 2016; Ramadan et al., 2020; Ruiz-Fernández et al., 2022; Teskereci et al., 2020; Yoong et al., 2023). Three studies were randomized controlled trials (Khedr et al., 2023; Ozturk, 2023; Sisman & Buzlu, 2022). Two studies utilized mixed-methods approaches: one combined an RCT with semi-structured interviews for thematic analysis (Esteban-Burgos et al.,

2024), and the other integrated quantitative descriptive analysis of questionnaire data with qualitative thematic analysis of 'point-of-view' exercises, reflective writing, and semi-structured interviews (Petty et al., 2020).

Sample sizes varied, with seven studies involving more than 100 nursing students. The largest sample size was 264 participants (Esteban-Burgos et al., 2024), and the smallest was 58 participants (Kamel, 2018). While most studies did not explicitly mention follow-up assessments, Castelino and Mendonca (2022) conducted post-tests on the 30th and 60th days and Sisman and Buzlu (2022) 60 days after the intervention to evaluate the retention of EI improvements.

Intervention Type

The interventions varied in design and delivery, often incorporating multiple techniques to enhance EI. The most commonly used methods were experiential learning activities, including role-play, simulation, and psychodrama. Thirteen of the 17 studies employed these methods (Beauvais, 2019; Castelino & Mendonca, 2022; Choi et al., 2015; Erkayiran & Demirkiran, 2018; Esteban-Burgos et al., 2024; Kamel, 2018; Lee & Kim, 2022; Orak et al., 2016; Ramadan et al., 2020; Ruiz-Fernández et al., 2022). Additional techniques included question-and-answer sessions (Erkayiran & Demirkiran, 2018; Sisman & Buzlu, 2022; Teskereci et al., 2020; Yoong et al., 2023), discussions (Castelino & Mendonca, 2022; Choi et al., 2015; Khedr et al., 2023; Orak et al., 2016; Ramadan et al., 2020; Teskereci et al., 2020), lectures (Beauvais, 2019; Castelino & Mendonca, 2022; Erkayiran & Demirkiran, 2018; Ramadan et al., 2020), storytelling (Lee & Kim, 2022; Petty et al., 2020), and mindfulness-based activities (Khedr et al., 2023; Ozturk, 2023).

Of the 13 studies that used experiential learning activities, seven used role-play (Castelino & Mendonca, 2022; Choi et al., 2015; Erkayiran & Demirkiran, 2018; Kamel, 2018; Lee & Kim, 2022; Orak et al., 2016; Teskereci et al., 2020) and only three were effective (Castelino & Mendonca, 2022; Choi et al., 2015; Erkayiran & Demirkiran, 2018). Two used psychodrama (Beauvais, 2019; Sisman & Buzlu, 2022) and one was effective (Sisman & Buzlu, 2022). Simulation was used in four studies (Esteban-Burgos et al., 2024; Ramadan et al., 2020; Ruiz-Fernández et al., 2022; Yoong et al., 2023) and all four marked an increase in EI in the population of study.

Alternative Intervention Approaches

Four studies that used alternative interventions to experiential learning activities all reported increases in EI among nursing students. These interventions focused on internal reflection and personal development, facilitated by professionals such as psychologists or certified practitioners. The common approaches included mindfulness-based stress reduction programs, emotional regulation training, digital storytelling, and self-care training incorporating spiritual dimensions. Collectively, these interventions led to significant improvements in EI and resulted in additional benefits, such as reduced stress levels, increased grit and life satisfaction, and enhanced empathy and social awareness (Goudarzian et al., 2019; Khedr et al., 2023; Petty et al., 2020; Ozturk, 2023).

Duration and Intensity of Interventions

The interventions in the reviewed studies varied considerably in both duration and intensity. For clarity, the interventions are categorized based on their duration into three groups:

1. Short-Term Intensive Programs: Interventions lasting less than one week.
2. Medium-Length Programs: Interventions conducted over one to eight weeks.
3. Extended Programs: Interventions lasting longer than eight weeks.

Short, Intensive Programs. Petty et al. (2020) delivered their intervention in a single session and gained positive outcomes. Lee and Kim (2022) provided 11 hours of training over three days. Castelino and Mendonca (2022) offered five two-hour sessions over five days. While they observed sustained EI improvements, Lee and Kim (2022) did not find significant changes, suggesting that short duration may not be the sole factor influencing effectiveness.

Medium-Length Programs. Several studies spanned four to eight weeks. Choi et al. (2015) held weekly sessions over eight weeks, leading to significant enhancements in EI and communication skills. Kamel (2018) conducted 90-minute sessions once a week for four weeks but did not observe significant EI changes. Both Ozturk (2023) and Khedr et al. (2023) conducted eight-week programs with positive outcomes, indicating that medium-length interventions can be effective when appropriately designed. Yoong et al. (2023) conducted two two-hour simulation sessions one week apart. Despite the brief total contact time, the spread over multiple weeks aligns it with medium-length programs. They reported positive outcomes, suggesting that the pacing and timing of sessions can influence effectiveness.

Extended Programs. Longer interventions included those by Teskereci et al. (2020), with 14 weeks of two-hour sessions, and Ramadan et al. (2020), with 30–45-minute sessions over 12 weeks. While Ramadan et al. (2020) reported increases in EI and clinical performance, Teskereci et al. (2020) did not find significant EI improvements, suggesting that extended duration does not guarantee effectiveness. These variations imply that the relationship between intervention duration and effectiveness is complex and may depend on factors such as content quality, participant engagement, and delivery methods.

Multiple measurement tools to gauge change in EI

The measurement of EI in interventions aimed at nursing students exhibits considerable diversity, reflecting the ongoing debate over whether EI is best conceptualized as an ability or a trait (Kotsou et al., 2019). This divergence significantly impacts both the assessment methods used and the interpretation of intervention outcomes. Among the 17 studies reviewed, a wide array of instruments was employed to measure EI. Beauvais (2019) utilized the ability-based Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), aligning with the ability model of EI. In contrast, trait-based self-report measures were predominant. Esteban et al. (2024), Ruiz-Fernández et al. (2022), and Yoong et al. (2023) employed versions of the Trait Meta-Mood Scale, assessing individuals' perceived emotional abilities. The Revised Schutte Emotional Intelligence Scale was used by Kamel et al. (2018) and Ozturk (2023), with Orak et al. (2016) and Ramadan et al. (2020) applying modified versions, reflecting its widespread acceptance in

measuring trait EI. Lee and Kim (2022) used the Wong and Law Emotional Intelligence Scale (WLEIS), while Choi et al. (2015) employed the Adult Emotional Quotient Test developed by Moon, based on Mayer and Salovey's theory. Teskereci et al. (2020) utilized Hall's EI Scale, and ErKayiran and Demirkiran (2018) applied the Bar-On Emotional Quotient Inventory, each bringing unique perspectives to EI assessment. Goudarzian et al. (2019) used the Bradberry and Greaves Standard Questionnaire, Sisman and Buzlu (2021) employed the Levels of Emotional Awareness and Emotional Expression Scale, and Castelino and Mendonca (2022) combined the EI (PC-Sc), Rosenberg Self-Esteem Scale, and Toronto Empathy Questionnaire. Khedr et al. (2023) developed an Emotion Regulation Questionnaire specifically for their study, and Petty et al. (2020) crafted a questionnaire to assess the effectiveness of stories on emotion and empathy.

Cultural and Contextual Factors

The diversity of geographic and cultural contexts—spanning Egypt, Saudi Arabia, Turkey, Spain, the United States, and beyond—demonstrates that EI interventions cannot be standardized universally. Cultural values, religious or spiritual beliefs, resource availability, and students' emotional backgrounds can profoundly influence how well these programs resonate. For instance, Khedr et al. (2023) tailored their intervention to the cultural contexts of Saudi Arabia and Egypt by incorporating discussions on life satisfaction influenced by local financial conditions, thereby aligning the training with participants' lived realities. Similarly, Ozturk (2023) integrated mindfulness practices with the cultural and religious ethos prevalent in Turkish society, emphasizing concepts such as fate and acceptance rooted in Islamic mysticism and Sufi teachings. This culturally congruent approach enhanced both acceptance and effectiveness of the intervention.

Contextual factors also extend to the clinical environment. While Lee and Kim (2022) focused on high-risk pregnancy scenarios and did not observe significant EI improvements—possibly due to the specificity of the context or a ceiling effect—other specialized settings yielded more promising results. Interventions implemented in neonatal nursing (Petty et al., 2020), community health nursing (Ramadan et al., 2020), and pediatric settings (Castelino & Mendonca, 2022) all reported positive EI outcomes. These examples underscore the importance of aligning interventions with participants' experiences and professional contexts. Together, these findings suggest that successful EI development programs must be both culturally nuanced and adaptable to the emotional intensity and complexity of their specific clinical and cultural settings.

Discussion

This literature review examines current research on interventions aimed at enhancing EI among nursing students. The findings reveal a diverse array of strategies, highlighting both the complexity of EI as a construct and the challenges associated with effectively integrating EI training into nursing education.

Experiential Learning Activities

For the purposes of this review, experiential learning activities are defined as interactive, participatory methods that engage nursing students in direct experiences and focused reflection to enhance their EI. Specifically, these activities include simulation, role-play, and psychodrama,

which involve active participation in realistic scenarios to develop emotional and clinical competencies.

Experiential learning activities that were found in the papers included in this review cover simulation, role-play and psychodrama. Simulation techniques have demonstrated greater effectiveness than traditional role-play methods for enhancing EI and communication skills. Spencer et al. (2019) found that participants rated mixed-reality simulation as significantly more realistic and useful than peer role-play for practicing difficult conversations. Their study showed that simulation produced greater gains in valuing collaborative relationships. Similarly, Daniastuti's (2018) experimental research revealed that students using simulation techniques achieved significantly higher speaking skill scores than those using role-play.

The effectiveness of EI interventions appears to also be influenced by the clinical context. While specialized nursing settings present unique challenges, the choice of learning method emerges as a critical factor in intervention success. The specialized context may have made it more likely for the intervention to succeed.

In high-risk pregnancy settings, Lee and Kim (2022) found that role-play-based interventions, while improving communication skills and clinical performance, did not significantly enhance EI. This outcome may reflect the limitations of role-play in capturing the complex emotional dynamics of high-risk obstetrics. Only Castelino and Mendonca (2022) achieved positive outcomes through role-play with students on pediatric units, enhancing EI, self-efficacy, empowerment, and empathy. Conversely, in palliative care, Esteban-Burgos et al. (2024) and Yoong et al. (2023) demonstrated that simulation-based approaches effectively increased EI, with Esteban-Burgos et al. noting particular benefits for active participants. These contrasting results underscore the potential superiority of simulation over role-play in emotionally demanding specialties, aligning with Spencer et al.'s (2019) findings on the enhanced realism and efficacy of simulation techniques.

The trend favoring simulation extends to other specialized contexts. In neonatal and pediatric settings, Petty et al. (2020) and Ramadan et al. (2020) reported improvements in EI and related competencies using storytelling with reflection and simulation, respectively. Similarly, in community health, Ruiz-Fernández et al. (2022) achieved positive outcomes through simulation, enhancing not only EI but also self-efficacy and empowerment.

This pattern of results suggests that while the clinical context influences intervention outcomes, the pedagogical approach plays a pivotal role in determining effectiveness. Simulation demonstrates consistent success across diverse nursing specialties, potentially due to its capacity to replicate the emotional complexity of real clinical scenarios more accurately than traditional role-play methods. This aligns with Daniastuti's (2018) findings on the superior outcomes of simulation in skill development.

This is contradictory to other literature reviews that are on different populations. The most used intervention to increase EI in nurses, as found by Saikia et al. (2023), was group training based mostly on lectures and discussions compared to the prevalent use of simulation in the nursing student population. The broader literature review on the adult population also does not mention simulation as being used prevalently (Kotsou et al., 2019). This discrepancy may highlight differences in educational strategies between student and practicing nurses or suggest that simulation is an emerging trend in nursing education that has not yet been widely adopted in other contexts.

Efficacy of Mindfulness and Self-Care Interventions

Studies that incorporated mindfulness practices, self-care training, and digital storytelling demonstrated significant improvements in EI among nursing students (Goudarzian et al., 2019; Khedr et al., 2023; Ozturk, 2023; Petty et al., 2020). These interventions focused on internal reflection, emotional regulation, and personal well-being—components closely related to EI. For instance, Ozturk (2023) utilized online mindfulness sessions led by a certified practitioner, resulting in increased EI levels and reduced stress. Similarly, Khedr et al. (2023) emphasized emotional regulation and observed significant gains in EI, grit, and life satisfaction. The success of these interventions underscores the potential of mindfulness and self-care strategies in cultivating EI, likely due to their emphasis on self-awareness and emotional regulation.

The effectiveness of these approaches suggests that EI development is closely tied to overall personal well-being and self-awareness. By helping students become more attuned to their own emotions and those of others, these interventions appear to foster emotional competence. The link between reduced stress and increased EI levels implies that stress management is a crucial component in developing emotional competencies, which is particularly relevant for nursing students preparing for a high-stress profession.

These findings align with the broader literature that highlights the effectiveness of mindfulness-based interventions in improving emotional competencies and reducing stress among healthcare professionals. The positive effect of mindfulness-based and self-care interventions on components of EI and well-being has also been observed among other high-stress professions, including nurses, palliative care professionals, and teachers (Gantt & Haberstroh, 2023; Mills et al., 2018; Wang et al., 2022; Wang, 2023). This transferability of benefits across various high-stress professions suggests that the skills developed through mindfulness and self-care practices are universally beneficial for emotional competence.

The multifaceted benefits observed, including improvements in grit and life satisfaction, indicate that these interventions have wide-ranging positive effects beyond just EI, contributing to overall professional and personal development. While the studies primarily focus on immediate improvements, the nature of mindfulness and self-care practices suggests potential for long-term benefits, as these interventions teach skills that can be continually practiced and refined over time.

Given their effectiveness, there's a strong case for integrating these types of interventions more systematically into nursing education programs, potentially from the early stages of training. This holistic approach to EI development in nursing education emphasizes the interconnectedness of emotional competence, stress management, and overall well-being, suggesting a need for nursing curricula to incorporate more comprehensive, wellness-focused interventions to effectively prepare students for the emotional demands of their future profession.

Role of Reflective Practices and Group Discussions

Many effective interventions incorporated group discussions and reflective practices, which facilitated deeper processing of experiences and emotions (Kamel, 2018; Orak et al., 2016; Petty et al., 2020; Ramadan et al., 2020). Reflective exercises encourage students to internalize learning, develop empathy, and enhance self-awareness—all critical aspects of EI. The integration of these practices appears to reinforce the learning from experiential activities and may be a key factor in successful EI development. Recent studies have emphasized the importance of these practices in developing EI. For instance, a reflective practice program for

preceptor nurses was found to significantly increase their EI by helping them convert stress into a more positive direction (Kim et al., 2022)

Group discussions have also been identified as a valuable tool in enhancing EI. A study on leveraging EI competencies for sustainable development of higher education institutions utilized focus group discussions among university campus counselors to explore strategies for coping with uncertainty and developing essential EI skills (Warrier et al., 2021). Taken together, these findings suggest that integrating reflective exercises and group discussions may reinforce learning from experiential activities and serve as a key factor in successful EI development.

Integration of Additional Outcome Measures

Several studies in this review assessed additional variables alongside EI, such as burnout, stress levels, empathy, communication skills, and clinical performance (Beauvais, 2019; Kamel, 2018; Petty et al., 2020; Ramadan et al., 2020). This approach reflects a recognition of the interconnectedness between EI and other aspects of nursing students' professional development and personal well-being. Notably, a similar pattern was observed in another literature review on interventions aimed at enhancing EI in surgical settings, where studies frequently included assessments of factors like burnout, psychological well-being, personality traits, job satisfaction, and performance metrics (Abi-Jaoudé et al., 2022). This consistency across disciplines suggests that incorporating a broader range of assessments may provide a more comprehensive understanding of how EI interventions impact various facets of healthcare education and practice.

Duration and Intensity of Interventions

The interventions aimed at increasing EI in nursing students varied widely in duration and intensity, ranging from short, intensive programs to extended courses. Notably, the effectiveness of an intervention did not always correlate directly with its length. For example, some short-term interventions led to significant EI improvements (Petty et al., 2020; Yoong et al., 2023), while certain longer programs did not yield the expected results (Orak et al., 2016). This suggests that the content and delivery methods may be more critical than duration alone. Intensive, well-designed interventions that focus on key EI components might be as effective as longer programs.

However, the literature suggests that the long-term effectiveness of these interventions requires further investigation. Kotsou et al. (2019) emphasize the importance of assessing intervention effects over time to determine if learned skills are retained and to distinguish between genuine EI improvements and mere increases in EI knowledge. They note that trait-related outcomes may take longer to change, making multiple long-term assessments essential to attribute EI changes to interventions accurately. This perspective is echoed by Saikia et al. (2023), who highlighted that many studies in their literature review lacked long-term assessments, considering such evaluations crucial for determining intervention effectiveness.

Furthermore, Dugué et al. (2021) argue that short-term interventions focused on a few conferences would likely be less effective than long-term interventions. They suggest that EI development programs should be implemented from the first year of nursing education to maximize their impact. This aligns with the idea that sustained, integrated approaches to EI development may be more beneficial than isolated, short-term efforts, despite some short-term interventions showing promising results in the studies reviewed.

Reporting measures used

The methodological heterogeneity underscores the challenges in drawing definitive conclusions about the effectiveness of EI interventions in nursing education. Consistent with the findings of Kotsou et al. (2019), the diversity of EI measures makes it difficult to ascertain whether these instruments capture the same underlying construct. While many studies reported significant improvements in EI following interventions—such as those by Kamel (2018), Lee and Kim (2022), Ozturk (2023), and others using the Schutte scales, and those employing the Trait Meta-Mood Scale (Esteban-Burgos et al., 2024; Ruiz-Fernández et al., 2022; Yoong et al., 2023)—the disparity in measurement approaches and theoretical foundations may influence these outcomes.

Studies utilizing unique instruments, such as the Emotional Regulation Questionnaire developed by Khedr et al. (2023) and the empathy-focused questionnaire by Petty et al. (2020), add to this complexity. The variations in assessment tools reflect differing conceptualizations of EI and may capture distinct facets of emotional competencies. Therefore, although the majority of studies suggest positive effects of interventions on EI among nursing students, the methodological variability calls for caution in interpreting these results. There is a clear need for more standardized measurement practices and rigorous, controlled studies to strengthen the evidence base and enable more accurate comparisons of EI interventions in nursing education.

Implications for Nursing Education

The findings underscore the importance of incorporating diverse and multifaceted approaches to EI development in nursing curricula. While experiential learning remains valuable, it should be complemented with mindfulness practices, self-care strategies, and opportunities for reflection. Educators should consider designing interventions that are context-specific and address the unique emotional challenges of various nursing specialties. By fostering both the cognitive and emotional competencies of nursing students, educational programs can better prepare them for the complex demands of clinical practice.

According to Machová et al. (2020), developing EI requires more than just knowledge transfer and skill development; it involves changing attitudes and habits over time. They highlight the KASH model—Knowledge (K), Attitude (A), Skills (S), and Habits (H)—as essential elements for real change. While traditional training often focuses on shaping the "thinking brain" through knowledge and skills, sustainable change engages the "emotional brain" by altering behaviors and habits. Research suggests that it takes at least 21 days to change an attitude, emphasizing the need for prolonged and comprehensive interventions (Machová et al., 2020).

By integrating these principles into nursing education, programs can achieve more profound and lasting improvements in students' emotional competencies. This holistic approach aligns with the goal of equipping nursing students with the skills necessary to navigate the emotional complexities of healthcare environments effectively.

Recommendations for Future Research

Future studies should aim for methodological rigor by employing larger, randomized controlled trials with standardized EI measurement tools. Longitudinal research is necessary to assess the long-term impact of EI interventions. Exploring the combination of different teaching methods, such as integrating mindfulness with experiential learning and reflective practices, may provide insights into the most effective strategies for enhancing EI. Additionally, research should consider the cultural and contextual factors that influence the success of EI interventions, ensuring that programs are tailored to meet the needs of diverse student populations.

Early studies tended to compare role-play and simulation with traditional teaching methods. However, if these methods are acknowledged as progressive attempts to bridge the gap between traditional classrooms, new metrics should be integrated to increase their efficacy (Yu, 2023).

Limitations of Existing Research

Several limitations were evident across the reviewed studies. Many lacked long-term follow-up assessments, making it difficult to determine the sustainability of EI improvements. Sample sizes varied, with some studies potentially underpowered to detect significant effects. Additionally, the use of different EI measurement tools complicates comparisons between studies. The absence of standardized instruments highlights the need for consistent evaluation methods in future research.

As Kotsou et al. (2019) noted, "Nevertheless, it is important to keep in mind that the field of EI interventions is relatively new and heterogeneous, which makes comparisons between studies difficult. As an example, more than 20 different EI measures have been used across studies" (p. 159).

This integrative literature review has several limitations that should be acknowledged. First, the search strategy was limited to specific databases and keywords, potentially excluding relevant studies. Second, the inclusion criteria were restricted to studies published in English, which may have led to the omission of valuable research conducted in other languages. Finally, the heterogeneity of the included studies, in terms of interventions, measurement tools, and study designs, made it challenging to draw definitive conclusions and conduct a meta-analysis.

Conclusion

Enhancing EI in nursing students is crucial for improving patient care and supporting the well-being of future nursing professionals. This review highlights that while experiential learning is widely used, integrating mindfulness, self-care, and reflective practices may offer more significant benefits. Nursing education programs should adopt a holistic approach to EI development, emphasizing both personal growth and professional competencies. By doing so, they can equip nursing students with the skills necessary to navigate the emotional complexities of healthcare environments effectively.

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