

# Development and Preliminary Validation of an Emotional Intelligence Training Program for Nurses in Madinah Hospitals, Saudi Arabia

Norah Abdullah O. Al Harbi<sup>1</sup>, Regidor III Poblete Dioso<sup>1</sup>

<sup>1</sup>Faculty of Nursing, Lincoln University College, Malaysia

Correspondence: [nora23231@hotmail.com](mailto:nora23231@hotmail.com)

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## ABSTRACT:

Background: Emotional intelligence (EI) is central to nurses' emotional awareness, self-regulation, motivation, empathy, and interpersonal functioning, yet structured EI development remains underrepresented in continuing professional development in Saudi hospitals. Objective: To develop and validate an EI training module tailored to nurses working in Madinah hospitals. Methods: A context-specific module was developed from the five-competency framework underpinning the thesis and refined through expert review and a 22-nurse pilot conducted outside the main trial sample. The finalized module comprised 11 experiential modules delivered over four weeks using lectures, discussion, case studies, role-play, simulation, reflection, and pre-/post-training checks. Its implementation was examined in a randomized controlled trial involving 120 nurses from Al Haram and Al Salam Hospitals, with 60 nurses allocated to the intervention and 60 to usual training. Outcomes were assessed at baseline, one week, and three weeks after the intervention using the Brief Emotional Intelligence Scale, nursing-performance measures, and the Utrecht Work Engagement Scale. Results: Five nursing and healthcare-management experts reviewed the module for clarity, cultural appropriateness, and relevance. Pilot testing supported feasibility, comprehensibility, and acceptable internal consistency of the study instruments (Cronbach's  $\alpha \geq 0.70$ ). In the main trial, intervention-group EI increased from 71.12% at baseline to 84.50% and 84.67% at one and three weeks, respectively; nursing performance increased from 70.83% to 83.80% and 84.12%; and work engagement increased from 70.74% to 84.72% and 85.93%. Between-group comparisons at each assessment were statistically significant ( $p < 0.001$ ). Conclusion: The module demonstrated preliminary content and feasibility validity and was associated with substantial, short-term sustained improvements in EI-related outcomes among nurses in Madinah hospitals. Longer follow-up and multisite psychometric evaluation are warranted.

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## 1. Introduction

Emotional intelligence (EI) refers to the capacity to recognize, understand, regulate, and use emotions in oneself and in interactions with others. In nursing, these capacities are clinically relevant because patient care requires therapeutic communication, teamwork, conflict management, stress regulation, and compassionate decision-making. Goleman's mixed model organizes EI into self-awareness, self-regulation, motivation, empathy, and social or relationship-management skills, which correspond closely to the emotional demands of contemporary nursing practice (Yüceyurt & Kaya, 2025).

The need for structured EI development is particularly salient in hospital environments characterized by high workload, emotionally charged encounters, and culturally diverse patient populations. Existing evidence links EI with nurses' performance, work engagement, communication, and occupational well-being (Alhakami & Baker, 2025; Alsufyani et al., 2022; Burgener, 2020). However, much of the Saudi literature remains cross-sectional, and evidence from intervention studies conducted with practicing nurses in Madinah is limited. The city's multicultural workforce and the additional demands associated with caring for local residents and international pilgrims create a context in which emotional adaptability and culturally responsive interpersonal skills are especially important (Albejaidi & Nair, 2021; Yousef et al., 2023).

The thesis from which this manuscript was derived addressed this gap through the development and evaluation of a structured EI training program. The present paper focuses on the selected objective: to develop and validate an EI training module tailored to enhance emotional awareness, regulation, motivation, empathy, and interpersonal skills among nurses in Madinah

hospitals. The paper therefore reports the module-development process, preliminary content and feasibility validation, and the outcome pattern observed when the module was implemented in a randomized trial.

## 2. Methodology

### 2.1 Design and setting

The study used a two-phase design. First, a structured EI training module was developed, expert-reviewed, pilot-tested, and refined. Second, the module was implemented within a randomized controlled trial. The study was conducted at Al Haram Hospital and Al Salam Hospital in Madinah, Kingdom of Saudi Arabia. These hospitals were selected because they serve culturally diverse patient populations and include emotionally demanding clinical environments.

### 2.2 Participants and allocation

The source population comprised registered nurses working in direct patient-care roles in the two hospitals. Eligibility required employment at either study site, at least six months of continuous clinical experience in the current role, direct patient-care responsibilities, and the ability to understand the training and questionnaires. Nurses on long-term leave, working exclusively in administration, participating in another EI or psychosocial training program, or unable to attend the intervention and follow-up assessments were excluded.

The main trial included 120 nurses. Participants were allocated equally to an experimental group ( $n = 60$ ) or a control group ( $n = 60$ ) using a computer-generated sequence stratified by hospital and unit type, with variable block randomization. Allocation concealment used sequentially numbered, opaque, sealed envelopes. Participants and trainers could not be blinded; outcome assessors and data analysts were blinded to allocation.

### 2.3 Development of the training module

The module was designed around the emotional competencies specified in the study objective and informed by the Goleman mixed model (Yüceyurt & Kaya, 2025). Development emphasized direct applicability to nursing practice, cultural and organizational fit within Madinah hospitals, and experiential learning. The content moved from foundational concepts to

applied clinical scenarios. It addressed emotional awareness and the “emotion compass,” distinctions between IQ and EI, core EI competencies, strategies for self-regulation and stress management, empathy and social awareness, communication, relationship management, teamwork and leadership, patient care, counseling, and integration into routine nursing practice.

Table 1. Structure and content of the emotional intelligence training module.

| Module | Core content                                       | Principal learning activities                                                          |
|--------|----------------------------------------------------|----------------------------------------------------------------------------------------|
| 1      | Introduction to EI and its significance in nursing | Interactive lecture, guided discussion, reflective review                              |
| 2      | Magnitude and applications of EI for nurses        | Case discussion linking EI with care quality and teamwork                              |
| 3      | Emotion compass and six primary emotions           | Visual mapping, personal examples, emotion-identification exercises                    |
| 4      | IQ and EI; foundations of emotional competence     | Comparison exercise and facilitated discussion                                         |
| 5      | Core EI components                                 | Mini-lecture, self-reflection, group work                                              |
| 6      | Applying EI in nursing contexts                    | Clinical cases involving communication, leadership, and teamwork                       |
| 7      | Strategies for enhancing EI                        | Mindfulness, stress-management practice, and homework reflection                       |
| 8      | EI and nursing practice                            | Application to patient and family interactions                                         |
| 9      | Self-awareness and self-regulation                 | Reflective practice and emotion-management exercises                                   |
| 10     | EI principles in patient care                      | Empathy, active listening, and difficult-conversation practice                         |
| 11     | Real scenarios and integration                     | Role-play and simulation: difficult patient, bad-news delivery, and emergency response |

The finalized module was delivered over four weeks by qualified contributors with experience in nursing education, psychology, and EI-related training. Its emphasis on communication and patient safety was consistent with established nursing guidance (Burgener, 2020). Delivery combined didactic presentations, interactive discussions, case studies, role-play, simulation, reflection, handouts, and workbooks. Attendance was monitored. The intervention was

intentionally practice-oriented: each competency was connected to recognizable clinical situations, including emotionally distressed patients, disagreement within teams, delivery of bad news, and medical emergencies.

### 2.4 Validation and pilot testing

Preliminary content validation was conducted by a panel of five faculty experts in nursing and healthcare management. The review focused on

clarity, cultural appropriateness, relevance to nursing practice, and suitability for the Saudi hospital setting. Feedback was used to refine wording, sequencing, examples, instructional strategies, and logistical arrangements.

A pilot study involving 22 nurses from departments not included in the main trial assessed the clarity, comprehensibility, cultural relevance, and feasibility of the instruments and intervention procedures. Pilot feedback was also used to evaluate the timing, order, delivery style, and suitability of the training activities. Internal consistency of the principal study instruments was re-examined, and Cronbach's alpha values were reported as at least 0.70. Because the thesis did not report a separate psychometric scale for the module itself, the validation reported here should be interpreted as preliminary content and feasibility validation rather than full construct validation of the educational intervention.

## 2.5 Measures and data collection

Data were collected at baseline, one week after the intervention, and three weeks after the intervention. The Brief Emotional Intelligence Scale (BEIS-10) assessed EI through self-emotion appraisal, others' emotion appraisal, regulation of emotion, and use of emotion. Nursing performance was assessed using the thesis's Nursing Performance Instrument (NPI) summary measure; the methodology also describes Paterson's Job Performance Questionnaire and the Six-Dimension Scale as supporting nursing-performance measures. Work engagement was measured with the Utrecht Work Engagement Scale. A researcher-developed questionnaire captured age, gender, marital status, nationality, educational qualification, clinical experience, hospital, unit, and previous relevant training.

## 2.6 Statistical analysis and ethics

Data were double-entered and analyzed using SPSS version 24. Descriptive statistics summarized participant characteristics and outcome scores. Independent-samples t-tests and chi-square tests were used for between-group comparisons, Pearson correlation examined relationships among EI, nursing performance,

and work engagement, and repeated-measures ANOVA assessed change over time and group-by-time effects. Statistical significance was set at  $p < 0.05$ . Ethical approval was obtained from the Lincoln University College Institutional Review Board, the Madinah Health Cluster, and the participating hospitals. Written informed consent was obtained, participation was voluntary, and confidentiality was maintained.

## 3. Results

### 3.1 Module validation and feasibility

The expert panel judged the module to be relevant to nursing practice and suitable for the local setting. Expert feedback supported the inclusion of clinical examples, reflective exercises, role-play, and scenario-based practice addressing patient communication, stress, teamwork, conflict, and emergency response. Pilot testing with 22 nurses indicated that the training sequence and materials were understandable and feasible. Minor refinements were made to content, delivery procedures, and timing before the main trial. The pilot also supported acceptable internal consistency for the principal measurement instruments, with Cronbach's alpha coefficients of 0.70 or higher.

### 3.2 Main trial outcomes

The experimental group showed marked improvement in all three reported outcomes, while the control group did not show comparable improvement. EI in the experimental group increased from a mean total score of  $38.45 \pm 3.27$  (71.12%) at baseline to  $43.80 \pm 2.63$  (84.50%) at one week and  $43.87 \pm 2.88$  (84.67%) at three weeks. The corresponding control-group percentages were 50.46%, 49.83%, and 49.83%. Between-group comparisons were statistically significant at baseline, one week, and three weeks (all  $p < 0.001$ ).

Nursing performance in the experimental group increased from  $34.50 \pm 3.38$  (70.83%) at baseline to  $39.17 \pm 2.66$  (83.80%) at one week and  $39.28 \pm 2.65$  (84.12%) at three weeks. In the control group, the percentage score decreased from 49.12% at baseline to 37.82% at one week and 37.22% at three weeks. Between-group

comparisons were significant at all three time points (all  $p < 0.001$ ).

Work engagement in the experimental group increased from  $34.47 \pm 3.57$  (70.74%) at baseline to  $39.50 \pm 2.55$  (84.72%) at one week and  $39.93 \pm 3.00$  (85.93%) at three weeks. The control

group showed 49.12% at baseline, 45.83% at one week, and 74.77% at three weeks. The between-group comparisons were statistically significant at baseline, one week, and three weeks ( $p < 0.001$  at each assessment according to the thesis summary table).

Table 2. Percentage scores for the three reported outcomes across assessment points.

| Outcome                      | Experimental baseline | Experimental week 1 | Experimental week 3 | Control baseline | Control week 1 | Control week 3 |
|------------------------------|-----------------------|---------------------|---------------------|------------------|----------------|----------------|
| EI, % score                  | 71.12                 | 84.50               | 84.67               | 50.46            | 49.83          | 49.83          |
| Nursing performance, % score | 70.83                 | 83.80               | 84.12               | 49.12            | 37.82          | 37.22          |
| Work engagement, % score     | 70.74                 | 84.72               | 85.93               | 49.12            | 45.83          | 74.77          |

### 3.3 Correlations and demographic analyses

Within the experimental group, no statistically significant correlation was found among EI, nursing performance, and work engagement at the reported assessment points. In the control group, EI and nursing performance showed a significant negative baseline correlation ( $r = -0.390$ ,  $p = 0.002$ ); post-intervention correlations were not statistically significant. In the experimental group, demographic variables were not significantly associated with EI at any assessment point. In the control group, age at post-intervention and marital status at baseline showed statistically significant associations, whereas gender, nationality, and educational qualification did not.

### 4. Discussion

This study developed and preliminarily validated a context-specific EI training module for nurses in Madinah hospitals. The module's principal design contribution was its translation of broad EI competencies into concrete nursing behaviors and situations. Rather than treating EI as an abstract interpersonal attribute, the intervention connected emotional awareness, regulation, motivation, empathy, and relationship management to therapeutic communication,

conflict resolution, stress management, teamwork, and emergency care. This alignment is consistent with evidence that emotional competence is most likely to transfer when learning is connected to the realities of clinical practice and with recent nursing program-development research (Yüceyurt & Kaya, 2025).

The expert-review and pilot findings support the module's content relevance and operational feasibility. The five-expert review helped establish that the content was understandable, culturally appropriate, and applicable to Saudi nursing practice. The 22-nurse pilot provided an additional safeguard by testing the materials and procedures with members of the target population before the main trial. The reported Cronbach's alpha values of at least 0.70 support the internal consistency of the principal instruments in the pilot context. Nevertheless, these procedures do not constitute a complete psychometric validation of the module. Future work should use a formal module evaluation rubric, report item-level content-validity indices, assess learner knowledge and observed behavioral performance, and test longer-term retention.

The main-trial outcome pattern strengthens the practical case for the module. Intervention-group

EI rose from a moderate baseline level to a high post-intervention level and remained stable at three weeks. Nursing performance and work engagement followed the same general trajectory. These findings are compatible with prior research associating EI with communication, performance, occupational stress management, and engagement among nurses (Alhakami & Baker, 2025; Alsufyani et al., 2022). The sustained pattern across the two post-intervention assessments suggests that the module's experiential and reflective elements may have supported early transfer beyond the training sessions, although the short follow-up period prevents conclusions about long-term sustainability.

The control-group results should be interpreted cautiously. The thesis reports lower nursing-performance and engagement scores at follow-up, but the study did not include a no-contact condition and the control group continued routine hospital training. Changes may therefore reflect contextual influences, workload, measurement variation, or regression-related processes as well as the absence of EI training. In addition, the baseline imbalance in EI and some outcomes indicates that the groups were not fully equivalent on all measured variables despite random allocation. The results consequently support a strong association between module implementation and improved outcomes, while future analyses should report adjusted group-by-time estimates, confidence intervals, attrition, and effect sizes.

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The study has several limitations. It was conducted in two hospitals in one Saudi city, limiting transferability to other regions and healthcare systems. Follow-up lasted only three weeks. Participants were not blinded, and outcomes were primarily questionnaire-based, creating potential for response and social-desirability bias. Finally, the module was validated through expert review and pilot feasibility work, but a larger independent evaluation of its educational and psychometric properties remains necessary.

## 5. Conclusion

A structured 11-module EI training intervention was developed for nurses working in the culturally diverse and emotionally demanding hospital context of Madinah. Expert review and pilot testing supported preliminary content validity, cultural relevance, clarity, and feasibility. When implemented in a randomized trial, the module was associated with substantial improvements in EI, nursing performance, and work engagement that were maintained at three weeks. The module is suitable for further evaluation and potential integration into nursing orientation, continuing professional development, and health-workforce education in Saudi Arabia. Future research should use multisite samples, longer follow-up, objective or observer-rated performance measures, formal module-validity indices, and transparent intention-to-treat analyses.

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## **8. Author Declaration**

Originality: The author declares that this manuscript is based on original work derived from the author's thesis and has not been published elsewhere in whole or in part.

Conflict of interest: The author declares no conflict of interest.

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