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Emotional Intelligence And Empathy As Predictors Of Clinical Competence Among Nursing Students: A Cross-Sectional Correlational Study

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ABSTRACT

This cross-sectional correlational research explored how emotional intelligence (EI) and empathy relate to clinical competence among 200 undergraduate nursing students from urban institutions in southern India. The study aimed to assess whether EI and empathy could serve as reliable predictors of students' clinical skills. Participants were assessed using three standardized tools: the Bar-On Emotional Quotient Inventory (EQ-i), the Jefferson Scale of Empathy (JSE), and the Nursing Clinical Competence Scale (NCCS). The average scores obtained were 98.42 (±11.07) for EI, 89.14 (±8.53) for empathy, and 83.72 (±7.48) for clinical competence. Statistical analysis revealed significant positive associations between EI and empathy ($r = 0.52$, $p < 0.001$), EI and clinical competence ($r = 0.57$, $p < 0.001$), and empathy and clinical competence ($r = 0.49$, $p < 0.001$). Furthermore, multiple linear regression analysis showed that EI ($\beta = 0.39$, $p < 0.001$) and empathy ($\beta = 0.31$, $p < 0.001$) jointly explained 44% of the variance in clinical competence ($R^2 = 0.44$). These findings highlight that both emotional intelligence and empathy play crucial roles in shaping clinical competence. The study recommends incorporating structured training programs focused on emotional and empathetic development within nursing education to enhance interpersonal effectiveness, professional performance, and overall quality of patient care.

Keywords: Emotional intelligence, empathy, clinical competence, nursing students, nursing education.

INTRODUCTION

Nursing, often described as both a science and an art, requires a delicate balance between technical expertise and emotional sensitivity. In today's increasingly complex healthcare systems, nurses are expected not only to perform clinical procedures with precision but also to demonstrate empathy, compassion, and emotional regulation in their interactions with patients and colleagues. Consequently, the inclusion of emotional competencies within nursing education has gained recognition as a vital element of professional training [1].

Emotional intelligence (EI), first conceptualized by Salovey and Mayer (1990) and later popularized by Goleman (1995), refers to the ability to recognize, understand, and manage one's own emotions while appropriately responding to the emotions of others [2,3]. According to Mayer, Salovey, and Caruso (2004), EI consists of four core abilities: perceiving emotions, using emotions to facilitate thought, understanding emotions, and managing emotions for adaptive functioning [4]. These skills are particularly essential in healthcare, where professionals frequently encounter emotionally charged situations that demand empathy, composure, and sound judgment.

Within nursing education, EI has been linked to multiple aspects of professional development, including effective communication, leadership, stress management, and ethical decision-making [5]. Research indicates that nursing students with higher EI tend to perform better in clinical environments, exhibiting stronger teamwork, critical thinking, and patient-centered communication [6]. Similarly, Akerjordet and Severinsson (2007) emphasized that emotionally intelligent nurses possess greater self-awareness, resilience, and empathy—qualities fundamental to compassionate and effective patient care [7].

While EI provides the cognitive foundation for understanding and regulating emotions, empathy forms the emotional bridge that connects healthcare providers with their patients. Empathy is defined as the ability to understand and share the feelings of others, fostering a deeper sense of compassion and patient-centered care [8]. Hojat (2007) distinguished between cognitive empathy, which involves intellectual understanding of another's experience, and affective empathy, which reflects emotional resonance with that experience [9]. In nursing, empathy enhances trust, communication, and clinical outcomes, with studies showing that empathetic nurses contribute to higher patient satisfaction, improved treatment adherence, and overall well-being [10–12].

EI and empathy are closely intertwined constructs that together shape the emotional and interpersonal dimensions of nursing practice. While empathy enables nurses to sense and interpret patients' emotions, EI equips them to manage these emotions constructively, avoiding compassion fatigue or burnout [13]. This combination promotes emotional balance, allowing nurses to deliver care that is both compassionate and professionally grounded. Codier and Kamikawa (2017) reported that nurses with higher EI not only

displayed stronger empathy but also experienced lower turnover rates and better job performance [14]. Such synergy is particularly vital for nursing students, who are in the process of developing professional identities while navigating the emotional and relational complexities of clinical training [15].

Clinical competence, another core aspect of nursing, refers to the integration of cognitive, psychomotor, and affective skills necessary for safe and effective patient care [16]. Benner's (1984) "Novice to Expert" framework describes the evolution of clinical competence through five stages - novice, advanced beginner, competent, proficient, and expert, each representing a higher level of experiential learning and professional judgment [17]. In academic settings, clinical competence is often evaluated through observation, simulations, and standardized tools such as the Nursing Clinical Competence Scale (NCCS) [18]. However, traditional nursing education has historically prioritized technical proficiency over emotional or interpersonal development, which can limit students' holistic preparedness for real-world clinical challenges [19].

In recent years, educational frameworks have increasingly recognized emotional literacy and empathic engagement as integral to professional competence [20]. The World Health Organization (WHO) has also highlighted the significance of emotional and social skills in healthcare training, noting their impact on communication, teamwork, and patient safety [21]. Despite this growing recognition, many developing countries, including India, still focus predominantly on biomedical content, often overlooking the cultivation of emotional and psychosocial competencies in nursing curricula [22]. This gap underscores the need for research examining how EI and empathy jointly influence clinical competence among Indian nursing students.

The present study addresses this gap by investigating the interrelationships between emotional intelligence, empathy, and clinical competence among undergraduate nursing students in southern India. It aims to assess the levels of these three constructs, explore their correlations, and determine whether EI and empathy significantly predict clinical competence. By establishing these associations empirically, this research seeks to provide evidence-based recommendations for integrating emotional and interpersonal skill development into nursing education. Strengthening these dimensions can foster well-rounded professional growth, enhance patient-centered care, and equip future nurses to meet the emotional and ethical demands of modern healthcare with competence and compassion.

MATERIALS AND METHODS

2.1. Research Design

This study adopted a quantitative, cross-sectional, correlational design to explore the relationships between emotional intelligence (EI), empathy, and clinical competence among nursing students. This approach was chosen as it enables the examination of associations between multiple variables without manipulating the natural study environment [30]. A quantitative framework ensured objectivity, replicability, and statistical precision, while the correlational design allowed the identification of predictors of clinical competence without implying causation [31]. Cross-sectional studies are particularly valuable in behavioral and educational research for assessing psychological constructs such as EI and empathy, as they permit simultaneous measurement and comparison of these traits within a defined population [32]. Moreover, this design is consistent with previous research investigating emotional and interpersonal competencies among nursing students [6, 25, 27].

2.2. Research Setting

The study was conducted between March and June 2025 in three accredited nursing institutions located in southern India. These colleges were affiliated with recognized health universities and were selected to represent a diverse demographic while maintaining uniformity in academic standards, as all followed the Indian Nursing Council (INC) guidelines. Each institution had well-equipped clinical training facilities, including tertiary-care hospitals and community health centers, ensuring students' direct engagement in patient care. Conducting the study in such applied clinical environments provided an authentic context to evaluate both emotional and practical competencies among participants.

2.3. Population and Sampling

The target population included undergraduate students enrolled in Bachelor of Science (B.Sc.) Nursing programs. The accessible population comprised students who had completed at least one clinical rotation to ensure they possessed adequate exposure to patient interactions and caregiving responsibilities. A purposive sampling method was employed to select participants meeting specific inclusion criteria. Eligible students were those in their 3rd or 4th year of study, who had completed at least one semester of clinical internship, and who provided informed consent to participate. Students on extended academic leave, engaged in administrative or non-clinical internships, or submitting incomplete questionnaires were excluded. A power analysis using GPower 3.1 software (effect size = 0.3, $\alpha = 0.05$, power = 0.80) determined that a minimum of 180 participants was required for reliable correlation and regression analyses [33]. To compensate for possible attrition or incomplete data, 200 students were recruited.

2.4. Demographic Characteristics

Demographic information collected from participants included age, gender, year of study, and cumulative grade point average (CGPA). These variables were recorded to control for potential confounding factors such as age and academic achievement, which might influence emotional maturity, empathy, or perceived clinical competence [34].

2.5. Data Collection Instruments

Data were collected using three standardized, psychometrically validated instruments. All questionnaires were administered in English—the medium of instruction in the participating institutions—and were pilot-tested among 20 students to assess clarity, comprehension, and contextual relevance.

Emotional Intelligence (EI): EI was measured using the Bar-On Emotional Quotient Inventory (EQ-i) [35], a 133-item self-report questionnaire assessing five composite dimensions: intrapersonal skills (self-awareness, assertiveness, independence, self-regard, and self-actualization), interpersonal skills (empathy, social responsibility, and interpersonal relationships), stress management, adaptability, and general mood. Responses were scored on a 5-point Likert scale ranging from "Very Seldom True of Me" (1) to "Very Often True of Me" (5). The EQ-i has demonstrated excellent internal consistency (Cronbach's $\alpha = 0.90$) and construct validity across healthcare populations [7, 35].

Empathy: Empathy was assessed using the Jefferson Scale of Empathy – Health Professions Student version (JSE-HPS) [36]. This 20-item scale measures three key dimensions: Perspective Taking, Compassionate Care, and Standing in the Patient's Shoes. Each item is rated on a 7-point Likert scale (1 = Strongly Disagree to 7 = Strongly Agree), with higher scores reflecting greater empathy. The JSE-HPS is widely used in nursing and medical education and has demonstrated strong reliability ($\alpha = 0.85–0.90$) and cross-cultural validity [9, 37].

Clinical Competence: Clinical competence was evaluated using the Nursing Clinical Competence Scale (NCCS) developed by Wang et al. (2019) [18]. The NCCS consists of 27 items divided into six domains: clinical care, teaching–coaching, communication, professional and ethical practice, critical thinking, and leadership. Each item is rated on a 5-point scale (1 = Not Competent to 5 = Highly Competent). The scale has been validated in diverse nursing education settings and has shown excellent internal consistency ($\alpha = 0.94$) [18].

Reliability Testing: Prior to analysis, reliability was reassessed using Cronbach's alpha for the present study sample, confirming strong internal consistency across instruments: EQ-i ($\alpha = 0.91$), JSE-HPS ($\alpha = 0.87$),

and NCCS (α = 0.93). All coefficients exceeded the acceptable threshold of 0.70, indicating high reliability [38].

2.6. Data Collection Procedure

Following ethical approval, permission was obtained from the principals and nursing departments of the participating colleges. Data collection spanned eight weeks. Students were approached during theory sessions and clinical postings and were briefed about the study's objectives, confidentiality measures, and voluntary participation. Written informed consent was obtained from all participants. The self-administered questionnaires (EQ-i, JSE-HPS, NCCS, and demographic form) were completed within 30–40 minutes under the researcher's supervision to prevent discussion and ensure independent responses. Completed forms were checked for completeness, coded anonymously, and stored in secure, password-protected digital files accessible only to the research team.

2.7. Ethical Considerations

Ethical approval was granted by the Institutional Ethics Committee (IEC) of the host university (Approval No. IEC/NURS/2025/04). The study adhered to the ethical principles outlined in the Declaration of Helsinki (2013) [39]. Participants were informed about the voluntary nature of participation, their right to withdraw at any stage without penalty, and the assurance of confidentiality and anonymity. All data were used exclusively for research and presented in aggregate form. Hard copies of data were securely stored and scheduled for destruction after five years in accordance with institutional policy. To minimize emotional distress, participants were informed that the questionnaires included reflective but non-invasive items. Counseling services were made available, though no participants reported discomfort during or after data collection.

2.8. Data Management and Statistical Analysis

All analyses were conducted using IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY, USA). Data were first screened for missing values, outliers, and normality using descriptive diagnostics. Missing data below 2% were replaced by mean substitution, and normality of continuous variables (EI, empathy, and clinical competence) was verified through Shapiro, Wilk tests, histograms, and Q-Q plots. Descriptive statistics, including means, standard deviations, and ranges, were computed for continuous variables, while frequencies and percentages were calculated for categorical data such as gender and year of study.

Reliability was assessed through Cronbach's alpha, and construct validity was verified via inter-item and item-total correlations exceeding 0.3 [40]. Pearson's product–moment correlation coefficient (r) was used to examine relationships among EI, empathy, and clinical competence, as these variables were normally

distributed [41]. Correlation strength was interpreted as weak (r = 0.10–0.29), moderate (r = 0.30–0.49), or strong (r ≥ 0.50) [42]. To determine the predictive influence of EI and empathy on clinical competence, multiple linear regression analysis was conducted, with EI and empathy as independent variables and clinical competence as the dependent variable. Age, gender, and academic year were entered as control variables. Regression assumptions including linearity, multicollinearity, homoscedasticity, and normality of residuals, were verified through diagnostic plots and variance inflation factors (VIF < 2.0). A significance level of $p < 0.05$ was used for all inferential analyses. Results were presented in descriptive tables with corresponding p-values, 95% confidence intervals, and explained variance (R^2).

RESULTS

3.1. Demographic Profile of Participants

A total of 200 undergraduate nursing students participated in the study. The demographic distribution is shown in **Table 1**. The majority of participants were female (82%), consistent with the gender composition typically observed in nursing education programs in India [43]. The mean age of participants was 21.3 ± 1.2 years (range: 19–24 years). Most participants were in their third (58%) or fourth year (42%) of study.

Approximately 65% of students reported having direct patient-care experience for more than 12 months, while 35% had less than a year of clinical exposure. Academic performance (measured by CGPA) ranged between 6.8 and 9.4, with a mean of 8.1 ± 0.6.

Table 1. Demographic Characteristics of Participants (n = 200)

Variable	Category	n	%	Mean ± SD
Age (years)				21.3 ± 1.2
Gender	Female	164	82	
	Male	36	18	
Year of Study	3rd Year	116	58	
	4th Year	84	42	
Clinical Experience	< 1 Year	70	35	
	≥ 1 Year	130	65	
Cumulative GPA				8.1 ± 0.6

The sample was sufficiently diverse to represent typical nursing student demographics across Indian higher education institutions.

3.2. Descriptive Statistics for Key Variables

Descriptive analyses were performed to summarize the central tendency and variability of Emotional Intelligence (EI), Empathy, and Clinical Competence scores. The results are presented in **Table 2**. The mean EI score was 98.42 ± 11.07, indicating moderately high emotional intelligence levels across the sample. The mean Empathy score (JSE-HPS) was 89.14 ± 8.53, reflecting a strong tendency toward perspective-taking and compassionate care. The mean Clinical Competence score was 83.72 ± 7.48, consistent with satisfactory clinical performance among nursing students.

All variables exhibited approximately normal distributions, with skewness and kurtosis values within ±1.0, satisfying assumptions for parametric tests [44].

Table 2. Descriptive Statistics for Study Variables (n = 200)

Variable	Range	Mean ± SD	Skewness	Kurtosis	Cronbach's α
Emotional Intelligence (EQ-i)	75–122	98.42 ± 11.07	0.41	-0.26	0.91
Empathy (JSE-HPS)	70–112	89.14 ± 8.53	0.38	-0.21	0.87
Clinical Competence (NCCS)	65–100	83.72 ± 7.48	0.47	-0.32	0.93

Reliability analysis confirmed high internal consistency for all instruments ($\alpha \geq 0.87$), exceeding the threshold for psychological scales [38].

3.3. Correlation Analysis

Pearson's correlation coefficients were computed to assess relationships among the three primary variables. The results (**Table 3**) revealed significant positive correlations among all constructs.

- Emotional Intelligence and Clinical Competence: $r = 0.57, p < 0.001$
- Empathy and Clinical Competence: $r = 0.49, p < 0.001$
- Emotional Intelligence and Empathy: $r = 0.52, p < 0.001$

These findings indicate that higher levels of EI and empathy are associated with higher clinical competence. According to Cohen's (1988) criteria, the correlations between EI and competence ($r = 0.57$) and between empathy and competence ($r = 0.49$) are considered **strong and moderate**, respectively [42].

Table 3. Pearson's Correlation Matrix among Study Variables (n = 200)

Variables	1	2	3
1. Emotional Intelligence	1		
2. Empathy	0.52**	1	
3. Clinical Competence	0.57**	0.49**	1

Note: p < 0.001, 2-tailed test.

The strong intercorrelation between EI and empathy aligns with theoretical expectations, as both constructs involve emotional perception, regulation, and interpersonal understanding [13, 14].

3.4. Group Differences in Clinical Competence

To explore potential differences in clinical competence across demographic groups, independent-sample *t*-tests and one-way ANOVA were conducted (**Table 4**).

No significant differences were observed in competence based on gender ($p = 0.287$) or academic year ($p = 0.109$). However, students with ≥1 year of clinical experience exhibited significantly higher clinical competence scores ($M = 85.46 \pm 6.92$) than those with <1 year ($M = 81.04 \pm 7.64$; $t(198) = 4.34$, $p < 0.001$).

This finding reinforces previous evidence suggesting that experiential learning and prolonged patient interaction enhance skill application and confidence [17, 19].

Table 4. Group Comparison of Clinical Competence Scores

Variable	Category	Mean ± SD	t / F	p-value
Gender	Male	82.96 ± 7.84	1.07	0.287
	Female	83.89 ± 7.42		
Year of Study	3rd Year	82.93 ± 7.65	2.59	0.109
	4th Year	84.91 ± 7.11		
Clinical Experience	< 1 Year	81.04 ± 7.64	4.34	< 0.001
	≥ 1 Year	85.46 ± 6.92		

3.5. Regression Analysis: Predictors of Clinical Competence

To test the study hypothesis, **multiple linear regression analysis** was conducted with **clinical competence** as the dependent variable and **emotional intelligence** and **empathy** as independent variables. Demographic factors (age, gender, academic year) were entered as control variables in the first step of the hierarchical model.

Model Summary

The regression model was statistically significant, $F(5, 194) = 31.21$, $p < 0.001$, explaining **44% of the variance ($R^2 = 0.44$)** in clinical competence. This suggests that EI and empathy jointly contribute nearly half of the explained variability in competence outcomes.

Model Coefficients

As shown in **Table 5**, emotional intelligence had a stronger standardized beta coefficient ($\beta = 0.39$, $p < 0.001$) than empathy ($\beta = 0.31$, $p < 0.001$), indicating that EI was the dominant predictor of clinical competence.

Among demographic variables, neither age nor gender had significant effects ($p > 0.05$), while clinical experience showed a modest positive influence ($\beta = 0.14$, $p = 0.032$).

Table 5. Multiple Linear Regression Analysis Predicting Clinical Competence (n = 200)

Predictor	**β**	**SE**	**t**	**p-value**	**95% CI (Lower, Upper)**
Constant	12.46	4.37	2.85	0.005	(3.85, 21.07)
Age	0.07	0.12	0.62	0.537	(-0.17, 0.32)
Gender (Female)	0.11	0.98	1.12	0.264	(-0.83, 3.01)
Clinical Experience	0.14	0.66	2.16	**0.032**	(0.12, 2.74)
Emotional Intelligence	**0.39**	0.04	**6.21**	**< 0.001**	(0.27, 0.52)
Empathy	**0.31**	0.06	**4.88**	**< 0.001**	(0.18, 0.44)

Model Statistics: $R^2 = 0.44$; Adjusted $R^2 = 0.43$; $F(5, 194) = 31.21$, $p < 0.001$

3.6. Residual and Diagnostic Tests

Model diagnostics confirmed that assumptions for linear regression were met:

- Normality of residuals: Verified by histogram and P–P plot inspection; residuals were symmetrically distributed.
- Linearity and homoscedasticity: Scatterplot of standardized residuals indicated even variance around zero.
- Multicollinearity: Variance inflation factors (VIF) were below 2.0 for all predictors, suggesting no multicollinearity [40].

These diagnostics confirmed the robustness and reliability of the regression model.

DISCUSSION

The present study investigated the relationships among emotional intelligence (EI), empathy, and clinical competence in undergraduate nursing students. The results clearly demonstrated that both EI and empathy are significant positive predictors of clinical competence, jointly explaining 44% of its variance. These findings emphasize that emotional and interpersonal competencies play a crucial role in determining nursing students' professional effectiveness.

4.1. Emotional Intelligence and Clinical Competence

The strong positive correlation between emotional intelligence and clinical competence ($r = 0.57$, $p < 0.001$) indicates that nursing students who possess higher EI are more capable of integrating cognitive, affective, and behavioral elements into clinical practice. This finding aligns with prior research emphasizing EI as a determinant of effective nursing performance [6, 7, 13]. Beauvais et al. (2011) reported similar results, identifying EI as a strong predictor of clinical performance and adaptability in challenging patient-care contexts [6].

The significant regression coefficient for EI ($\beta = 0.39$) in the current study suggests that the ability to perceive and regulate one's emotions enhances decision-making, stress management, and communication, the critical components of clinical competence [45]. Emotional regulation allows nurses to remain composed in high-pressure situations, ensuring accurate clinical judgment and safe patient care.

The observed relationship supports Mayer and Salovey's (1997) ability model of emotional intelligence, which posits that the capacity to perceive and manage emotions facilitates adaptive reasoning and problem-solving [23]. In nursing, such abilities translate into calmness under stress, empathy during patient interaction, and self-reflection during critical decision-making [46]. Students with higher EI may thus

demonstrate superior performance during clinical evaluations, as they manage emotional challenges while maintaining professional conduct and ethical awareness [47].

The results also resonate with the "Novice to Expert" framework proposed by Benner (1984), suggesting that emotional awareness and control are essential for transitioning from rule-based practice to intuitive, expert-level judgment [17]. Emotional intelligence enhances this progression by promoting reflective thinking, teamwork, and patient-centered care.

4.2. Empathy and Clinical Competence

Empathy exhibited a significant positive correlation with clinical competence ($r = 0.49$, $p < 0.001$) and a meaningful predictive effect ($\beta = 0.31$). These findings affirm that empathetic nursing students perform better in clinical settings due to improved communication, trust-building, and patient engagement. This result is consistent with previous findings by Lee and Lee (2018), who found that empathy strongly influences communication competence and interpersonal sensitivity among nursing students [26].

Hojat (2007) described empathy as the foundation of compassionate healthcare, facilitating mutual understanding between patient and caregiver [9]. In this study, students with higher empathy scores demonstrated stronger clinical competence, supporting the idea that empathy promotes holistic care and ethical decision-making. The positive relationship also mirrors the findings of Taylor et al. (2020), who, through meta-analysis, confirmed empathy as a significant predictor of clinical performance in healthcare education [25].

Empathy's predictive strength in the present study underscores its multidimensional nature, encompassing both cognitive empathy (understanding patient perspectives) and affective empathy (emotionally resonating with patients) [8, 24]. Nursing students who effectively balance these dimensions can connect meaningfully with patients while maintaining emotional boundaries, thus achieving higher levels of competence and professional satisfaction [48].

Moreover, empathy contributes to reduced burnout, enhanced resilience, and improved patient satisfaction, outcomes supported by previous studies across medical and nursing disciplines [20, 29, 49].

4.3. Interrelationship Between Emotional Intelligence and Empathy

The positive correlation between emotional intelligence and empathy ($r = 0.52$, $p < 0.001$) supports the theoretical interdependence of these constructs. Emotional intelligence provides the cognitive framework for identifying and managing emotions, while empathy provides the affective mechanism for connecting with others' experiences [14].

Fernández et al. (2021) found that emotionally intelligent nurses display greater empathetic engagement and fewer compassion-fatigue symptoms, highlighting EI's role in sustaining empathy over time [14]. The findings of this study similarly indicate that emotional competence enables nursing students to express empathy without emotional exhaustion. This balance is critical in avoiding compassion fatigue, a known occupational hazard in nursing practice [50].

Together, EI and empathy contribute to what Goleman (1995) referred to as "social intelligence", the synergy of emotional regulation and interpersonal awareness that enhances collaborative care and patient trust [3]. The present results suggest that this synergy underpins the formation of competent, emotionally stable, and patient-centered nursing professionals.

4.4 Influence of Clinical Experience on Competence

Students with ≥1 year of clinical experience exhibited significantly higher competence scores ($p < 0.001$), confirming that sustained practical exposure reinforces the integration of emotional and technical skills. This result corroborates Benner's model, which emphasizes experiential learning as the basis for advancing from novice to competent practitioner [17].

Clinical environments offer real-time emotional challenges that enhance students' EI and empathy through lived experiences. As shown by Por et al. (2011), clinical exposure increases emotional maturity, empathy, and coping ability among nursing students [34]. This supports incorporating extended, reflective clinical training into nursing curricula to foster affective learning alongside technical proficiency.

4.5. Educational Implications

The findings carry significant implications for nursing education and curriculum development. Traditional nursing programs often emphasize psychomotor and cognitive skills, with limited structured training in emotional and interpersonal domains [22]. However, this study demonstrates that EI and empathy jointly predict nearly half of clinical competence variance, underscoring their equal importance to technical training.

To bridge this gap, the following recommendations are proposed:

Integration of EI and Empathy Training Modules: Implement workshops and reflective practices focusing on emotional awareness, empathy exercises, and self-regulation techniques [51].

Simulation-Based Learning: Include patient-simulation sessions that emphasize emotional communication, ethical decision-making, and crisis management under stress [52].

Mentorship and Reflective Journaling: Encourage students to maintain reflective journals documenting emotional experiences during clinical postings. Such practices enhance self-awareness and empathy [53].

Continuous Assessment of Emotional Competencies: Adopt validated psychometric tools such as the Bar-On EQ-i and Jefferson Scale in formative evaluations to track emotional growth.

By embedding these strategies, nursing institutions can cultivate emotionally intelligent, empathetic, and clinically competent graduates ready to meet the demands of modern healthcare.

4.6. Theoretical and Cultural Relevance

This study contributes to the theoretical understanding of emotional-social competence within the Indian nursing education context. While EI and empathy have been extensively studied in Western populations [25, 27], their dynamics in collectivist, relationship-oriented cultures such as India remain underexplored. The findings confirm that these constructs retain predictive validity across cultural boundaries, though their expression may be shaped by sociocultural norms emphasizing compassion, respect, and humility in caregiving [54].

Furthermore, the study validates the applicability of Mayer and Salovey's ability model and Davis's multidimensional empathy model within non-Western contexts, supporting their universal relevance to healthcare education [23, 24].

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