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Exploring the power of emotional intelligence: a comprehensive evaluation of its impact on the clinical competence of nursing students

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Abstract

Background Emotional intelligence incorporates important aspects of human connections to develop self-management ability which can boost individual performance. However, existing literature lacks a comprehensive assessment of how emotional intelligence specifically impacts the clinical competence of nursing students. Therefore, the purpose of this study was to determine how emotional intelligence could positively influence the clinical competence of nursing students, ultimately leading to their success.

Method A cross-sectional study was conducted on a convenience sample of 181 nursing students. The Schutte Self-Report Emotional Intelligence Test was used to measure the emotional intelligence of students; and Clinical Competence Questionnaire were used to measure the clinical competence of students. Necessary statistical analyses were run using SPSS.

Results Findings indicate a moderate level of emotional intelligence among nursing students 130.4 (*SD* = 35.4); and moderate level of clinical competence among nursing students 186.8 (*SD* = 49.7). The results revealed there was a correlation between students' level and emotional intelligence scores; and students' level and clinical competence scores. There was a strong positive correlation between emotional intelligence and clinical practice scores. Multiple linear regression showed the following predictors for emotional intelligence: students' level and course; and the following predictors for clinical competence: course, level, and emotional intelligent.

Conclusion Emotional intelligence is a crucial aspect in the success and performance of nursing students. Further research studies in multi-geographical areas are required to compare and confirm the findings of the study.

Clinical relevance Emotional intelligence in nursing refers to a nurse's ability to comprehend, use, and manage their emotions in ways that encourage successful communication and conflict resolution. Emotional intelligence can assist nurses create a better rapport with patients, which will improve their hospital experience and make them feel well cared for. Emotional intelligence is also vital for self-motivation and building relationships.

Clinical trial number Not applicable.

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Keywords Emotional intelligence, Clinical competence, Nursing students, Nursing, Education

Introduction

Emotions, which are complex psycho-physiological responses, are generated by subjectively significant events in a person's life, and psychologists have been studying them for almost a century. Teaching is an emotional process in which teachers regulate, screen, and control their feelings to achieve educational efficacy and create a positive learning environment for students [25]. Emotional intelligence (EI) is defined as the ability to monitor one's own and other people's emotions and feelings, distinguish between them, and utilize this information to guide one's thinking and actions [23]. Goleman identified five key components of EI, which are: self-awareness, self-regulation, empathy, motivation, and social skills. EI incorporates important aspects of human connection to develop self-management abilities, such as flexibility, temperament control, and tension reduction, which can boost individual performance. As a result, there is a growing awareness of the significance of EI in academic development, professional experiences, and clinical practice [15].

Nursing education in Saudi Arabia has developed over the decades. The nursing workforce continues to face issues like low enrollment rates and high turnover [4]. EI is important in nursing because it affects decision-making, communication, and empathy—all of which are necessary for clinical competency. Increased clinical performance is associated with higher EI in nursing students, and increased work satisfaction, stress reduction, and burnout are associated with higher EI in practicing nurses. Positive work environments are essential for efficient healthcare delivery, and they can be established by leaders with high EI [18].

Many studies have investigated the relationship between EI and academic achievement at various educational levels, emphasizing its significance in identifying students who require guided intervention [23]. Another study revealed that EI had a positive impact on students' performance and led to academic success, with the teacher-student connection being a strong moderator in this model. Supporting the development of EI and the teacher-student relationship enhances students' well-being and improves their academic performance [9]. Wang also reported EI to be positively associated with students' academic success [25]. Another study revealed that those with high EI are more likely to seek social support and help when necessary, which reduces the chance of mental health issues [26].

A study was conducted to investigate how emotional intelligence affects the clinical competence among nursing students. The results showed that nursing students with higher EI show stronger clinical competence by being more aware to patients' needs, and having higher interpersonal skills and better stress management, which lead to better patient outcomes [21]. Another study found that students with higher EI, particularly those with strong self-awareness and empathy, perform better in clinical settings. Their emotional regulation and ability to negotiate difficult interpersonal situations enable them to thrive at patient care and clinical assessments [14].

Teachers' engagement was also positively associated with the academic achievement of students. It was stated in an article that students who wish to thrive academically should pay attention to their EI, including empathy and self-motivation skills [17]. Further, Budler et al. found a significant difference in EI scores between students in their first year and their third year, indicating that the EI of students changes over time and can be enhanced [7]. A study that was performed to investigate the relationship between emotional intelligence and academic achievement, with a particular emphasis on how EI might improve students' well-being, resilience, and motivation. The study revealed that EI is a predictor of academic achievement and well-being in the university students [10].

A cross-sectional study on 322 nursing students to measure EI as viewed by nursing students at the Majmaah University, Saudi Arabia [2]. The majority of the students exhibited EI levels ranging from moderate to high (96.6%). EI levels varied significantly among students based on their age, gender, educational level, marital status, physical and psychological health, and grade point average ($p < 0.05$). The study's findings provided useful insights for university nursing educators, emphasizing the necessity of developing emotional intelligence and incorporating it into nursing curricula. It also emphasizes the importance of developing training sessions and seminars based on sociodemographic characteristics, in order to improve EI among nursing students. A study included 300 nursing students from King Saud bin Abdul-Aziz University for Health Sciences, Jeddah, Saudi Arabia to investigate the relationship between EI and critical thinking [6]. The study revealed high level of EI (54.9%) and moderate level of critical thinking (66.4%). The study concluded developing EI and critical thinking skills in nursing students would improve their problem-solving and clinical judgment skills, resulting in better qualified clinical services.

Knowledge gap has appeared through conducting a literature review on the impact of EI on nursing students' clinical competence. While there is growing interest in the role of EI in nursing education and clinical

practice, several areas remain unexplored or inadequately addressed. Studies often fail to directly link between EI and the improvement in students' clinical competence. Existing literature on EI and its potential impacts on nurse students often focuses on general concepts of success but lacks a comprehensive assessment of how it specifically impacts the clinical competence of nursing students. This gap is significant since EI is believed to have an impact on critical components of healthcare, such as patient care, communication, and stress management, all of which are required for well-rounded clinical competence. Without research relating EI to clinical competency, nursing education may ignore critical interpersonal skills. By addressing this gap, the authors' study has the potential to broaden the knowledge base, providing insights into how EI affects clinical practice and identifying strategies to include EI training into nursing school. This could result in a more comprehensive approach to clinical competence, ensuring that healthcare practitioners excel in both technical and emotional elements of treatment.

Studies may be more successful if they focus on how EI affects certain competences in nursing practice. Therefore, the purpose of this study was to determine how EI could positively influence the clinical competence of nursing students, ultimately leading to their success. Two aims were addressed: (1) to examine EI and clinical competence levels among students attending nursing education programs; and (2) to determine the relationship between EI and students' clinical competence and associated variables. The study's hypothesis: there is a significant relationship between EI and students' clinical competence and associated variables. By understanding how EI influences students' clinical competence, we could identify effective strategies to enhance patient care and overall healthcare outcomes.

Theoretical framework

The current study was guided by the Novice to Expert theoretical framework. It was established by Patricia Benner in 1982 and is composed of five stages, namely novice, advanced beginner, competent, proficient, and expert (See Fig. 1). Stage one (novice): This refers to a nursing student in his or her first year of clinical education; clinical behavior is relatively limited and rigid. During this stage, the core components of EI, such as self-awareness and self-regulation, may be developed by students. Stage two (advanced beginner): These are recent graduates in their first jobs. Such nurses have more experience, which allows them to identify the relevant components of a situation. They have knowledge but not much experience. At this point, developing EI includes identifying and reacting to patients' and colleagues' feelings. Stage three (competent): These nurses lack the flexibility of skilled and proficient nurses but identify the nature of clinical problems faster and more accurately than advanced beginners. In this stage, clinical decision-making increasingly incorporates EI. Students start to manage stress more effectively and improve their interpersonal communication skills.

Stage four (proficient): Nurses at this level can see situations as "wholes" rather than "parts." They learn from experience and know how to change plans in response to various situations. At this point, students' EI is more developed since they can react to patients' emotional demands with intuition. Stage five (expert): Expert nurses can identify requirements and resources in various situations and achieve their objectives. These nurses understand what must be done. They no longer rely only on rules to guide their conduct in certain circumstances. They have an instinctive understanding of problems due to their experience. At this stage, EI is highly developed. They can manage complex emotional dynamics in patient care. Each stage builds upon the previous one as these principles are gained from clinical experience. The Novice to Expert theory has altered people's perceptions of what it takes to be a skilled nurse. The expert is no longer the highest-paid nurse but rather the nurse who provides the best nursing care [1]. EI is considered a skill that can be developed and enhanced through practice and clinical experience. (EI) is an important skill that allows nurses to deliver better care to their patients.

Methodology

Study design and setting

This study used a cross-sectional, descriptive correlational design to find the association between variables [22]. The research was conducted at a public Nursing College in Riyadh, Saudi Arabia. The College of Nursing provides a comprehensive education that focuses on developing students' clinical skills and knowledge, preparing them for the healthcare work environment. It also offers modern resources that supports the effective communication in nursing practice. They aim to graduate

Fig. 1 From Novice to expert nursing theory

qualified nurses who can contribute to the improvement of the healthcare system in Saudi Arabia.

Sample

A convenience sample of male and female nursing students enrolled at various levels in the selected nursing college were included in the study. The focus of the study was on students studying at level 4 and above, considering their experiences in the clinical environment through the courses they undertake. Those who chose to participate in the study were included. The rationale of taking nursing students from level 4 and above that is because they started their clinical practice and they are suitable for the study to measure the clinical competence. The total number of students in the last four-to-five semesters is likely around 300. With a proportion of 50%, a 95% confidence interval, and a 5% margin of error, using the Raosoft sample size calculator [13]; the required sample size was determined at 169. To handle missing data, which is common in research, approximately 5% were added, providing a final minimum sample size of 177 students. In this study, the sample size reached to 181 nursing students.

Measures

A demographic data survey was established by the researcher to determine age, gender, semester level, course, and previous knowledge of EI. In addition, EI was measured by the Schutte Self-Report Emotional Intelligence Test (SSEIT) established by [24]. This tool comprises a 33-item self-report scale, with responses ranging from 1 (strongly agree) to 5 (strongly disagree) on a 5-point Likert scale. This tool has a Cronbach's alpha reliability coefficient of 0.90. Scores below 111 are considered low and scores above 137 are considered high. Scores between 111 and 137 are considered moderate scores [24]. Studies performed in Saudi Arabia such as Alharbi and Alshahrani' study who reported good internal consistency for the SSREIT, with Cronbach's alpha 0.87 [3].

The clinical competence of nursing students was measured by the Clinical Competence Questionnaire [19]. This tool comprises a 47-item self-report scale. The responses range from 1 (do not have a clue) to 5 (know in theory, competent in practice without supervision) on a 5-point Likert scale. This tool has a Cronbach's alpha reliability coefficient of 0.98. There is no cutoff score for the scale; higher scores indicate a higher degree of clinical competence [19]. Studies performed in Saudi Arabia such as Al-Qahtani et al.'s study which reported good internal consistency for the Clinical Competence Questionnaire, with Cronbach's alpha 0.91 [5]. The survey form was pilot-tested to ensure its suitability for students' understanding. This testing was conducted on a small group of students to address any issues with the questionnaire's questions. The pilot testing also helps improve the quality and accuracy of the items, ensuring that they effectively measured the intended constructs of the study. To verify the validity of the findings, students who participated in the pilot study were not included in the main study.

Data collection procedures

The researcher provided information on the study and its goals to the participants. The 181 nursing students were aware that their participation in the study was entirely voluntary. Data collection took approximately eight weeks. Students were given a questionnaire at the end of their clinical courses to complete it within nearly 15 min. The questionnaires were distributed and administered by researchers and faculty members. Each participant was assigned a number to maintain confidentiality. During the data collection process, all participants filled out and completed the questionnaire in full with no missing values in the dataset.

Data analysis

Data were analyzed utilizing the Statistical Package for the Social Sciences (SPSS version 27) software package. Descriptive statistics such as frequency, mean, and percentage were used to describe the demographic characteristics and the EI and clinical competence scores. Regarding inferential statistics, Pearson's correlation test was used to identify the relationship between demographic data (age and level) and the EI and clinical competence. An independent t-test was used to assess the mean values of the EI and clinical competence scores in relation to all the categorical variables in the study (gender, course, and previous knowledge of EI). Multiple linear regression analysis was used to see how well the variables were explained by the independent variables. P values were considered significant if less than 0.05 for all the results [22].

Ethical considerations

Ethics approval was obtained from the Institutional Review Board (IRB) committee at King Saud University with the following number: KSU-HE-23-892. The study was performed according to the guidelines of the Declaration of Helsinki. All participants provided informed consent to participate in the study. The participants were aware that they had the option to withdraw from the study at any time. The survey was completed by all participants without any negative consequences. There was no potential harm or benefit from participation in the study. The confidentiality and privacy of the participants were maintained, and only the researcher had access to their information, which was saved on a password-protected computer.

Table 1 Demographic characteristics of undergraduate nursing students

Variables	Frequency	%
Age		
19	7	3.9
20	92	50.8
21	56	30.9
22	15	8.3
23	11	6.1
Gender		
Male	82	45.3
Female	99	54.7
Level		
4	44	24.3
5	34	18.8
6	19	10.5
7	54	29.8
8	30	16.6
Course		
Maternity	36	19.9
Medical surgical	34	18.8
Pediatric	25	13.8
Critical care	36	19.9
Community nursing	31	17.1
Psychiatric	19	10.5
Previous knowledge of emotional intelligence		
Yes	124	68.5
No	57	31.5

Table 2 Emotional intelligence and clinical competence scores

Descriptive statistics				
	N	Minimum	Maximum	Mean ± SD
Total emotion scores	181	66.00	165.00	130.4530 ± 35.47964
Total competence scores	181	49.00	235.00	186.8011 ± 49.78548
Valid N (listwise)	181			

Results

Sample characteristics

A total of 181 undergraduate nursing students participated in the current study, with a response rate of 100%. Most participants were 20 years old (92, 50.8%). More than half (99, 54.7%) of the participants were female. Most (54, 29.8%) of them were from level seven. Concerning the course, 36 (19.9%) participants were in a maternity course and 36 (19.9%) were in a critical care course. The majority (124, 68.5%) of the participants had previous knowledge of EI (Table 1).

Emotional intelligence and clinical competence scores

The overall mean EI score was 130.4 ± 35.4, with a minimum score of 66 and a maximum of 165. The findings indicated a moderate level of EI among the nursing students. Moreover, the overall mean clinical competence score was 186.8 ± 49.7; the minimum was 49 and the maximum was 235. The findings indicated a moderate level of clinical competence among the nursing students (Table 2).

Table 3 Emotional intelligence (EI) and its correlation with students' level and clinical competence among undergraduate nursing students

Variables		Pearson Correlation	Sig. (2 tailed)	Interpretation
Emotional intelligence	Students' level	0.871	0.000*	Strong
Clinical practice	Students' level	0.849	0.000*	Strong
Emotional intelligence	Clinical practice	0.742	0.000*	Strong

Note. *Pearson's correlation test; Correlation is significant at the 0.01 level (2-tailed)

Table 4 The mean of emotional intelligence and clinical competence scores among students based on nursing clinical courses

Group statistics				
Variables	Course	N	Mean	Std. Deviation
Total emotion scores	Maternity	36	154.6111	21.55429
	Medical-surgical	34	134.0588	35.76264
	Pediatric	25	113.0800	32.560098
	Critical care	36	113.91666	35.091208
	Community	31	133.77419	34.014418
	Psychiatric	19	127.00000	37.606146
Total competence scores	Maternity	36	220.7222	29.66153
	Medical-surgical	34	190.6765	53.95662
	Pediatric	25	162.1600	46.527483
	Critical care	36	165.08333	46.775680
	Community	31	191.32258	47.201262
	Psychiatric	19	181.78947	52.016642

Bivariate analysis

Pearson's test showed no correlation between age and EI scores ($r = 0.02$, $p = 0.05$) or clinical competence scores ($r = 0.04$, $p = 0.05$). However, a strong positive correlation was found between the students' level and EI scores ($r = 0.871$, $p = 0.01$) and between the students' level and clinical competence scores ($r = 0.849$, $p \leq 0.01$). A strong positive correlation was also seen between EI and clinical practice scores ($r = 0.742$, $p \leq 0.01$); see Table 3.

The independent two-tailed t-test showed no significant difference in EI scores between female participants ($M = 132.3$, $SD = 35.0$) and male participants ($M = 128.1$, $SD = 36.0$); $t(179) = 0.783$, $p = 0.435$. In addition, the t-test showed no significant difference in clinical competence scores between female participants ($M = 188.7$, $SD = 50.4$) and male participants ($M = 184.4$, $SD = 49.1$); $t(179) = 0.6$, $p = 0.568$. Furthermore, students in the maternity course showed the highest mean EI ($M = 154.6$, $SD = 21.5$) and clinical competence ($M = 220.7$, $SD = 29.6$) scores ($p = 0.005$) compared with other courses (see Table 4).

In addition, there was no statistically significant difference in the mean EI score between participants who had previous knowledge of EI ($M = 131.7$, $SD = 35.8$) and those who did not ($M = 127.6$, $SD = 34.7$); $t(179) = 0.79$, $p = 0.470$. Additionally, no statistically significant difference in the mean clinical competence score was observed between participants who had previous knowledge of EI ($M = 189.3$, $SD = 48.8$) and those who did not ($M = 181.1$, $SD = 51.7$); $t(179) = 1.03$ $p = 0.301$.

Multivariate analysis

Multiple linear regression analysis revealed the following predictors of EI: students' level ($p = 0.04$) and course ($p = 0.002$). The multiple regression model was statistically significant ($R^2 = 0.760$, F (5,175) = 110.6, $p \leq 0.05$). In addition, multiple linear regression revealed the following predictors of clinical competence: course ($p = 0.08$), level ($p = 0.001$), and EI scores ($p = 0.001$). The multiple regression model was statistically significant ($R^2 = 0.652$, F (6,174) = 631.3, $p \leq 0.05$).

Discussion

To improve patient satisfaction and nursing service quality, a nurse must possess both clinical competence and EI [12]. Emotions take precedence over reasoning, as observed by cognitive scientists. Emotions are crucial in regulating behavior and thought processes in the nursing care process, which also involves clinical decision-making and critical thinking. Students' clinical competence is greatly enhanced when they can control their emotions, become more emotionally flexible, and use good emotions to successfully relieve negative moods like depression, procrastination, and anxiety [11]. Clinical competence is more focused on taking action. Equivalent feelings must be associated with every nursing behavior. To accomplish nursing goals, it is crucial for nurses and nursing students to control their own emotions. Therefore, this paper aimed to identify the impact of EI on the clinical competence of nursing students.

The current study highlighted that EI is a key component of clinical competence and not only a soft skill by relating the stages of Benner's model to EI. From self-awareness in the novice stage to emotional mastery in the expert stage, every level in Benner's framework is deeply linked to the growth of emotional intelligence. The results provided support to the concept that EI is essential for nursing students' development and it should be incorporated into nursing curricula in order to develop future nurses' technical and emotional skills.

The current study showed a moderate level of EI and clinical competence among nursing students. These results differed from a study by Belay and Kassie, which revealed low levels of EI and clinical competence: 99.94 ($SD = 25.40$) and 74.97 ($SD = 7.49$), respectively [8]. However, the results of the current study were consistent with Dou et al.'s study showing a moderate level of EI and clinical competence among students: 125.17 ± 14.98 and 97.91 ± 19.55, respectively. The majority of participants in this study were 20 years old [11]. In contrast, in Moawed et al.'s study, the majority (80.75%) of the sample was aged between 16 and 18 years [20]. In the current study, female participants were more in number than male ones. This was consistent with Han and Johnson's study, which also had mostly female participants (74%) [16].

The current study revealed no correlation between EI and the students' age, as well as between clinical competence scores and age. These results differed from Moawed et al.'s study, which revealed a correlation between EI scores and age ($r = 0.04$, $p = 0.001$) [20]. Moreover, the current study revealed no significant difference in EI scores between female and male participants. This was different from Belay and Kassie's study, which revealed a statistically significant difference in the mean clinical competence scores between genders, with male participants performing better ($t(186) = 3.27$, $p < 0.0001$) [8].

In addition, the current study showed a strong positive association between EI and clinical competence. These findings were consistent with a study by Belay and Kassie that found a strong correlation between the EI and clinical competence of students ($r(186) = 0.767$, $p < 0.0001$) [8]. Moreover, the current study showed a strong positive correlation between students' level and EI scores and between students' level and clinical competence scores. Similar results were reported by Moawed et al., who found a positive correlation between EI and grade level ($r = 0.197$, $p < 0.005$) [20]. Additionally, the current study showed no statistically significant difference in the students' EI and clinical competence scores based on previous knowledge of EI. These results were similar to a study by Belay and Kassie, which revealed no statistically significant difference in the mean EI scores between students with previous experience ($M = 102$, $SD = 25.06$) and those without ($M = 98.22$, $SD = 25.58$) [8].

The current study showed that maternity course students had the highest mean EI and clinical competence scores. This result is explained by the fact that students in maternity courses experience more clinical application areas such as prepartum, labor, and postpartum units, have more clinical practice days, and interact with patients more frequently. Furthermore, the current study identified course, students' level, and EI scores as predictors of clinical competence. Belay and Kassie (2021) revealed similar results, with linear regression analysis showing that EI was a predictor of clinical competence ($\beta = 0.219$, $p < 0.0001$). In another study, EI was found to be a significant predictor of nursing students' clinical practice performance. This suggests that students' EI has a great influence on their clinical competence [27].

Limitations of the study

The current study has many limitations. Only one geographical area was included, and self-reported measures were used. Another limitation involves participant selection. The sampling design chosen was convenience sampling, which impacts internal validity and hinders the results' generalizability. Moreover, the nursing students may have had prior experience with clinical practice, which could have influenced the results.

Study implications

The current study contributes to the body of knowledge on EI among nursing students. The findings indicate that EI abilities may be enhanced; thus, more emphasis should be placed on EI skill development, and EI should be incorporated into the nursing curriculum. In addition, EI training seminars and awareness sessions for educators and students could be implemented. Policy development could take place to integrate EI into the curriculum of all Saudi nursing schools. Further research studies in multigeographical areas are required to compare and confirm the study's findings.

Conclusion

Nursing students interact with people from many cultures and backgrounds regularly, so they must develop various skills and knowledge to provide high-quality healthcare. EI is a crucial factor influencing the success and performance of nursing students. Students' academic achievement benefits from increased awareness and knowledge of their own emotions. Higher EI may enable students to pursue their interests more actively and think more broadly about topics of interest, which could explain why this group of nursing students performs better academically. It is also suggested to explore the impact of EI on specific domains or populations, such as leadership, workplace performance, healthcare outcomes, or mental health in future research.

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Author contributions

K. A. wrote the main manuscript text and prepared figures and tables.

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Data availability

The author confirms that the data supporting the findings of this study are available within the article.

Declarations

Ethics approval and consent to participate

The study was performed according to the guidelines of the Declaration of Helsinki. The ethical approval was obtained from the committee at King Saud University. All participants provided informed consent to participate in the study.

Consent for publication

K.A. gives consent to BMC Nursing Journal to publish the data as an original research study.

Competing interests

The authors declare no competing interests.

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