

Emotional Intelligence among Saudi Nursing Students and Its Relationship to Their Critical Thinking Disposition at College of Nursing- Jeddah, Saudi Arabia

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Abstract Background: Emotional intelligence and critical thinking skills can prepare nursing students for delivering competent nursing practice and help them adapt to the clinical environment. Although personal emotion is important in critical thinking, it is often a neglected issue to explore the nature of the relationship between emotional intelligence and critical thinking disposition together among nursing students. **Objective:** This study aimed to describe the emotional intelligence among Saudi nursing students and its relationship to their critical thinking disposition. **Methods:** a descriptive correlational research design was conducted using a convenient sample of all Saudi nursing students (N=300) studying at College of Nursing- Jeddah (CON-J), King Saud bin Abdul-Aziz University for Health Sciences, Jeddah, Saudi Arabia. Emotional Intelligence Scale and Critical Thinking Disposition Scale were used to collect the data after obtaining the official and ethical approvals. **Results:** the highest percentages of nursing students have a relatively high level of emotional intelligence (54.9%) and moderate (66.4%) disposition towards critical thinking. Emotional intelligence was significantly correlated to critical thinking disposition ($r = 0.594$, $p < 0.001$) and can predict it where the regression model is significant ($F = 52.404$, $p < 0.001$). Moreover, nursing students differ significantly across academic levels regarding their perception of both skills. **Conclusion & Recommendations:** Fostering emotional intelligence and critical thinking disposition among nursing students would enhance their problem-solving skills and judgment abilities which in turn, lead to providing more qualified clinical services. Educational training courses, workshops and seminars should be prepared specifically for all academic levels for more development and enhancement of these skills. In addition, emotional intelligence and critical thinking disposition ought to be considered for more inclusion and incorporation in the undergraduate and graduate nursing curricula. Further study should be preceded as a longitudinal design because the development of both skills requires a long time.

Keywords: emotional intelligence, critical thinking disposition, nursing students, nursing education programs

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1. Introduction

In the modern-day changing healthcare environment, Emotional intelligence (EI) and critical thinking (CT) become crucial and principal components in imparting safe and effective nursing care and enhance service quality [1,2,3]. Nurses as frontline healthcare providers ought to be emotionally intelligent, critical thinker, creative, and self-directed to be able to make suitable decisions and solve clinical problems [4,5]. Since nurses expected to safeguard and promote the well-being of people and to enhance their quality of living [1,6]. Appraisal, expression, and regulation of emotions, and utilization of emotional information in thinking and acting considered the main domains of emotional intelligence in nursing practice [7].

Moreover, nurses' critical thinking is wanted specially to make sound nursing related-decisions and meet the patients and families' caring needs in collaboration with the other healthcare professionals [5,8]. An important measure of critical thinking is the disposition of a person to use possessed thinking [9]. Sosu [10] identified two factors for critical thinking disposition to be specific; critical openness and reflective scepticism.

Likewise, nursing college students should be aware of their own feelings and thoughts before the ones of the patients and their families. This requires nursing students to acquire emotional intelligence and critical thinking skills [1,11,12] which can prepare students for delivering competent nursing practice and help them adjust to the clinical environment. While nursing programs may not offer a formal course for emotional intelligence and critical thinking, different courses across the eight

semesters of nursing programs emphasize those aspects of providing nursing care [1,6]. Empowering students to be emotionally clever and think critically is not only a primary purpose of higher education, yet in addition, encourages the progression of schools and colleges and causes them to survive, create, advance and promote scientific societies [6,13].

1.1. Background on Study Variables and Conceptual Framework

The conceptual framework underlying the current study builds on the models that proposed for emotional intelligence by Schutte et al., [7] and critical thinking dispositions by Sosu [10]. The following paragraphs clarify the concepts and the dimensions underline these models.

1.1.1. Emotional Intelligence (EI)

The psychologists Mayer and Salovey [14] are the first who used the word EI and defined Emotional Intelligence as "the ability to perceive emotions, to assess and generate emotions to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotion to promote emotional and intellectual growth". EI guarantees that feelings are stated and no longer brushed off or suppressed. Consequently, effective understanding of self and others may help the development of more insight into the complex situations that professional relationships bring within nursing clinical training [15].

Based on Mayer and Salovey' work on emotional intelligence, Schutte et al., [7] recognized three foremost dimensions for Emotional Intelligence. First, *appraisal and expression of emotions* imply the capacity to discover and read emotions in self and others. This detection of emotion can be completed in self through the potential to deeply recognize personal feeling and conflicts. Emotions can be detected in others through voices, pictures, and facial expressions. Second, *regulation of emotion* displays the ability to modify and control emotion in both self and others. Therefore, the emotionally intelligent person can manipulate emotions, even bad ones, and manage them to perform deliberate goals. Third, *utilization of emotional information* in thinking and acting reflects the aptitude to connect emotions to facilitate different cognitive activities. The emotionally intelligent person can benefit from his or her converting moods so one can pleasant fit the responsibility at hand. This category includes flexible planning, creative thinking, motivation and redirected attention [7]. It is far essential to note that every individual can enhance or restrict his/her EI abilities through aspects of experience and socialization and learn new approaches to address them [16]. Since emotions and thoughts are intertwined, emotional intelligence and critical thinking should be analyzed together. This is particularly relevant and significant to nursing students' education and practice [1].

1.1.2. Critical Thinking (CT)

Despite distinct definitions for critical thinking, no consensus has yet been reached [17]. However, critical thinking is generally defined as "a process of purposeful, interactive reasoning, criticism and judgment about what people believe and do"[18]. Yildirim and Ozkahraman [19] also defined critical thinking in nursing as "the process of

reflective and reasonable thinking about nursing problems without a single solution and is focused on deciding what to believe and do". While Critical thinking dispositions (CTDs) refers to "attributes or habits of the mind that are integrated into an individual's beliefs or actions conducive to critical thinking" [9].

Sosu [10] hypothesized a two-factor model to measure critical thinking disposition namely; Critical Openness and Reflective Scepticism. *Critical Openness* mirrors the inclination to be enthusiastically exposed to new ideas, serious in appraising these ideas and adjusting one's thinking in the light of undoubted evidence. *Reflective Scepticism*, on the other hand, conveys the tendency to learn from one's past experiences and be questioning of evidence. These parsimonious two factors dispositional taxonomy can serve as a useful framework for research specially for the measurement of critical thinking. A degree of critical openness and reflective scepticism is required for an individual to have a disposition to critical thinking [10]. For this study in the context of undergraduate students, critical thinking disposition instead of critical thinking skill has been chosen because it is a more reliable indicator of how likely a person is to think critically [20].

1.2. Problem Statement and Significance of the Study

Lack of emotional competency and critical thinking skills demonstrated by new nurses frequently disapproved by Healthcare employers [21]. Yet, many educators incessantly fight to involve students in these activities and students occasionally use critical thinking skills to solve problems [22]. On the same token, employers overwhelmingly agree that the content and quality of education in local universities do not adequately prepare students for the workforce with respect to critical thinking [23]. On the other hand, emotion might be the other culprit at work in producing this deficit of good thinking. Also, part of the problem lies in the difficulty of fostering transfer across situations and the need to practice skills until they become more automatic patterns of action [24].

Since nursing is a discipline that utilizes the mental and intellectual strength of nursing and bases practice upon evidence, it holds great importance for nurses and nursing students to identify the level of their emotional intelligence and critical thinking skills at their undergraduate level to improve them [1,2]. Although they are considered as fundamental and intertwined qualities for success in professional life, it is seen that emotional intelligence and critical thinking qualities are handled separately in different studies [1]. For examples, some studies focused on measuring critical thinking among nursing students [2,3,5,17]. Another study measured emotional intelligence among nursing students [21]. Assumed that few studies handle the relationship between emotional intelligence and critical thinking, this study intends to fill the gap specifically for nursing students in the Saudi Arabian culture.

It is important to ascertain the EI level among nursing students and its relationship to critical thinking as a first step prior to developing and testing interventions to enhance these skills [1]. This is especially important

considering the fact that literature is asking for education to promote the emotional and social development of students at all levels of education [16]. In this regard, the main purpose of the study was to describe the levels of emotional intelligence and critical thinking disposition among undergraduate nursing students and the relationship between them. This study is of great importance in terms of contributing to the literature and shedding the light on these skills for nursing students in Saudi Arabia.

1.4. Aim of the Study

The aim of this study was to describe emotional intelligence among Saudi nursing students and its relationship to their critical thinking disposition at the College of Nursing- Jeddah.

1.5. Research Questions

- What are the levels of undergraduate nursing students' emotional intelligence and critical thinking disposition?
- What is the relationship between undergraduate nursing students' emotional intelligence and their critical thinking disposition?
- What is the relationship between undergraduate nursing students' academic level and their emotional intelligence and critical thinking disposition?

2. Materials and Methods

2.1. Research Design and Setting

This study conducted a descriptive correlational research design at CON-J which affiliated to King Saud bin Abdul-Aziz University for Health Sciences, National Guard Health Affairs, Jeddah, Saudi Arabia. CON-J admits female Saudi nationals only and awards a Bachelor of Science in Nursing (BSN) after four years of academic studying and one year of internship.

2.2. Participants

A convenient sample of all undergraduate Saudi nursing students at the College of Nursing (CON-J) participated in this study (N=300). The inclusion criterion was nursing students who registered for levels (4 to 8) per the academic year 2017/2018. Those nursing students starting core nursing courses in their second academic year, by the level 4 in the college of nursing where the study was conducted after finishing their three preparatory semesters. The valid response rate was 95.33%, representing 286 out of 300 nursing students who participated in the study.

2.3. Measuring Instruments

Three tools were used for data collection.

2.3.1. The Schutte Self Report Emotional Intelligence Test (SSEIT)

SSEIT proposed by Schutte et al., [7] was adapted to measure undergraduates nursing students' level of

emotional intelligence. The scale consists of 33 items, with three categories which are; appraisal and expression of emotions (13 items), regulation of emotions (10 items) and utilization of emotions (10 items). Responses were measured on a five-point Likert-type scale that ranged from 1 to 5; (1=strongly disagree, 5=strongly agree). Items 5, 28, and 33 scored by reverse coding as they are negative statements. The scale items were randomly distributed to avoid leading sentences. The total SSEIT score ranged from 33 to 165. Emotional intelligence score was calculated as follow: Low EI (33 to 77), moderate EI (78 to 121) and high EI (122-165). Higher scores indicating the distinctiveness of emotional intelligence.

2.3.2. Critical Thinking Disposition Scale (CTDS)

CTDS developed by Sosu [10] was used to measure the critical thinking disposition among nursing students. The CTDS is an 11-item instrument that measures two dispositional domains; Critical Openness (7 items) and Reflective Scepticism (4 items). Responses were measured on a five-point Likert-type scale that ranged from 1 to 5;(1=strongly disagree, 5=strongly agree). The scores of the 11 items were summed to provide an overall dispositional score for an individual with a range of 11–55. Disposition score calculated as follow: low (11-34); moderate (35–44); and high disposition (45–55). The authors permit free use of the scales for research and clinical purposes and available in the public domain.

- In addition, the information form was developed by the researchers to elicit academic characteristics that can introduce students. It consists of questions regarding their age, academic level, the status of participating in training about emotional intelligence and critical thinking or not, and whether they attach importance to these skills in their clinical study.

2.4. Validity and Reliability

The study tools were tested for internal reliability using the Cronbach's alpha correlation coefficient. The results proved the tools were reliable with correlation coefficient α 0.808, and 0.754 for EI, and CT, respectively, while the statistical significance level was set at $p \leq 0.05$. In addition, a pilot study was conducted with 5% of nursing students who were later excluded from the study subjects with no changes occurred in the final tools.

2.5. Data Collection

After obtaining the Con-J research committee approval, the questionnaires were distributed by the researchers to nursing students who agreed to participate in the study in their break time which was identified from their academic schedules. Data collection took two months, from March till April 2018.

2.6 Ethical Considerations

Ethical approval was obtained from CON-J research committee. The researchers explained the aim of the research to all participants. The privacy and confidentiality of data were maintained. Participants' informed consent was assured. The anonymity of participants was granted.

2.7. Statistical Analysis

Data were coded by the researchers and statistically analyzed using SPSS version 20. Frequency and percentages were used for describing demographic and academic characteristics. Descriptive statistics (mean and standard deviations) and Inferential statistics (Student's t-test, and Analysis of Variance (ANOVA), Pearson correlation coefficient and Regression analysis (R^2)) were used to analyze the results of the study. Regression analysis (R^2) was run to test the predictive power of the independent variable (emotional intelligence) on the dependent variable (critical thinking). R^2 change was tested with F- test. A significant F value for R^2 meant that emotional intelligence added a significant prediction of critical thinking. The level of statistical significance was set at $p \leq 0.05$. Pearson correlation coefficient values indicated as follow; $r=0.1$ weak relationship, $r= 0.3$ moderate relationship, and $r =0.5$ strong relationship.

3. Results

3.1. Demographic Characteristics

Table 1 illustrates that Saudi nursing students were quite youthful with 58.0% of them being between 21 - 22 years of age, with the mean and SD of 21.26 ± 1.19 years old. About one third (35.7 %) of them were enrolled in the fourth academic level and rest of the students were distributed across the other academic levels. The largest proportion of students reported that they had previous information about emotional intelligence (69.9%) and critical thinking (83.2%). The most frequently reported sources of this information were self-reading (53.8%) and lectures (51.7%). All nursing students perceived both emotional intelligence and critical thinking as important skills for nursing practice. Table 1.

3.2. Mean Percent Score and Level of Emotional Intelligence among Saudi Nursing Students

Table 2 reveals the mean percent score of nursing students' perception of overall emotional intelligence as (67.81 ± 8.81) with the highest mean for utilization of emotions dimension (71.97 ± 10.87) followed by regulation of emotions dimension (68.68 ± 11.45) and appraisal and expression of emotions dimension (63.95 ± 10.33). In addition, Table 2 indicates that slightly above half proportion of nursing students (54.9%) had high

emotional intelligence level while 45.1% of them had moderate emotional intelligence level.

3.3. Mean Score and Level of Critical Thinking Disposition among Saudi Nursing Students

Table 3 reveals the mean percent score of nursing students' perception of overall critical thinking disposition as (67.76 ± 12.12). Reflective scepticism dimension slightly had the higher mean (68.38 ± 17.77) than critical openness dimension (67.41 ± 12.09). In addition, Table 3 indicates that the highest proportion of nursing students (66.4%) had moderate critical thinking disposition level, 23.1% of them had high critical thinking disposition level while 10.5 % had low critical thinking disposition level.

Table 1. Distribution of Saudi Nursing Students According to Demographic and Academic Characteristics (N = 286)

Demographic and Academic Characteristics	No.	%
Age		
≤ 20	75	26.2
21 - 22	166	58.0
> 22	45	15.7
Min. – Max.	19.0 – 24.0	
Mean \pm SD.	21.26 \pm 1.19	
Current Academic Level		
Fourth	102	35.7
Fifth	38	13.3
Six	50	17.5
Seventh	40	14.0
Eighth	56	19.6
Previous information about:		
- Emotional Intelligence		
Yes	200	69.9
No	86	30.1
-Critical thinking		
Yes	238	83.2
No	48	16.8
*The source of this information:		
Self-Reading	154	53.8
Lecture	148	51.7
Training Program	32	11.2
Scientific Conference	11	3.8
Workshop	46	16.1
Perceived importance of Emotional Intelligence and Critical Thinking to nursing practice?		
Yes	286	100
No	0	0

Notes. SD: Standard Deviation *Different choices.

Table 2. Mean Percent Score and Level of Emotional Intelligence among Saudi Nursing Students

Dimensions of Emotional Intelligence	Min. – Max.	Mean Percent score
- Appraisal and Expression of Emotions	29.0 – 63.0	63.95 \pm 10.33
- Regulation of Emotions	27.0 – 49.0	68.68 \pm 11.45
- Utilization of Emotions	23.0 – 50.0	71.97 \pm 10.87
Overall Emotional Intelligence	91.0 – 155.0	67.81 \pm 8.81
Levels of Emotional Intelligence		
Levels	No.	%
- Low Emotional Intelligence	0	0.0
- Moderate Emotional Intelligence	129	45.1
- High Emotional Intelligence	157	54.9

Notes. SD: Standard Deviation.

Table 3. Mean Percent Score and Level of Critical Thinking Disposition among Saudi Nursing Students

Dimensions of Critical Thinking Disposition	Min. – Max.	Mean Percent score
- Critical Openness	12.0 – 35.0	67.41 ± 12.09
- Reflective Scepticism	4.0 – 20.0	68.38 ± 17.77
Overall Critical Thinking Disposition	16.0 – 55.0	67.76 ± 12.12

Levels of Critical Thinking Disposition		
Levels	No.	%
- Low Critical Thinking Disposition	30	10.5
- Moderate Critical Thinking Disposition	190	66.4
- High Critical Thinking Disposition	66	23.1

SD: Standard Deviation.

3.4. Mean Score of Emotional Intelligence and Critical Thinking Disposition by the Current Academic Level

Table 4 reveals significant differences among nursing students across the academic levels regarding their perception of overall emotional intelligence ($F = 8.695, p < 0.001$) as well as overall critical thinking disposition ($F = 10.523, p < 0.001$). The same trend of the result was reflected in emotional intelligence dimensions including; appraisal and expression of emotions dimension ($F = 13.768, p < 0.001$), regulation of emotions dimension ($F = 4.957, p = .001$), and utilization of emotions dimension ($F = 5.841, p < 0.001$). Similarly, this result was reflected in critical openness ($f = 5.882, p < 0.001$), and reflective scepticism ($F = 11.738, p < 0.001$) dimensions of critical thinking disposition. Nursing students at the eighth level had the highest rating of overall emotional intelligence (72.65 ± 9.15) and overall critical thinking disposition (73.21 ± 13.41) while, nursing students at the fourth level

had the lowest rating of overall emotional intelligence (65.25 ± 7.98) and overall critical thinking disposition (62.68 ± 10.45). Further values see Table 4.

3.5. Correlation and Regression Analysis between Emotional Intelligence and Critical Thinking Disposition

Table 5 reveals a significant positive strong correlation between overall emotional intelligence and overall critical thinking disposition where ($r = 0.594, p < 0.001$) as well as between overall emotional intelligence and critical openness and reflective scepticism dimensions where ($r = 0.488, p < 0.001$; $r = 0.535, p < 0.001$) respectively. Also, there are positive significant strong correlations between all dimensions of emotional intelligence including; appraisal and expression of emotions, regulation of emotions, and utilization of emotions with overall critical thinking disposition, critical openness and reflective scepticism dimensions where ($p < 0.001$).

Table 4. Mean Score of Emotional Intelligence and Critical Thinking Disposition by the Current Academic Level of Saudi Nursing Students

Current Academic Level	Emotional Intelligence			
	Appraisal and Expression of Emotions Mean ± SD.	Regulation of Emotions Mean ± SD.	Utilization of Emotions Mean ± SD.	Overall Emotional Intelligence Mean ± SD.
-Fourth	59.18 ± 10.02	65.44 ± 10.04	72.94 ± 10.01	65.25 ± 7.98
-Fifth	67.86 ± 7.35	70.26 ± 12.31	71.97 ± 9.76	69.84 ± 7.75
-Six	63.12 ± 7.67	68.05 ± 12.15	65.95 ± 13.16	65.47 ± 9.16
-Seventh	65.10 ± 9.38	69.63 ± 11.39	72.13 ± 9.12	68.60 ± 7.68
-Eighth	69.92 ± 11.26	73.39 ± 11.16	75.45 ± 10.20	72.65 ± 9.15
F(p)	13.768 (<0.001*)	4.957 (0.001*)	5.841 (<0.001*)	8.695 (<0.001*)

Current Academic Level	Critical Thinking Disposition		
	Critical Openness Mean ± SD.	Reflective Scepticism Mean ± SD.	Overall Critical Thinking Disposition Mean ± SD.
-Fourth	64.11 ± 10.43	60.17 ± 17.32	62.68 ± 10.45
-Fifth	69.55 ± 13.59	78.29 ± 14.07	72.73 ± 12.58
-Six	69.21 ± 12.18	69.75 ± 15.69	69.41 ± 11.63
-Seventh	64.46 ± 9.77	69.53 ± 17.63	66.31 ± 8.84
-Eighth	72.45 ± 13.22	74.55 ± 16.68	73.21 ± 13.41
F(p)	5.882 (<0.001*)	11.738 (<0.001*)	10.523 (<0.001*)

Notes. SD: Standard Deviation, F: F-test (ANOVA); ANOVA: Analysis of Variance. *Statistically significant at $p \leq 0.05$.

Table 5. Correlation Between Emotional Intelligence and Critical Thinking Disposition

Emotional Intelligence	Critical Thinking Disposition		
	Critical Openness	Reflective Scepticism	Overall Critical Thinking Disposition
Appraisal and Expression of Emotions	r	0.379	0.447
	p	<0.001*	<0.001*
Regulation of Emotions	r	0.428	0.502
	p	<0.001*	<0.001*
Utilization of Emotions	r	0.384	0.350
	p	<0.001*	<0.001*
Overall Emotional Intelligence	r	0.488	0.535
	p	<0.001*	<0.001*

r: Pearson coefficient *: Statistically significant at $p \leq 0.05$.

Table 6. Multivariate Linear Regression Analysis between Emotional Intelligence and Critical Thinking Disposition

Variable	Beta	SE	t	p	R	R ²	F	p
Appraisal and expression of emotions	0.250	0.067	4.411	<0.001*				
Regulation of emotions	0.316	0.067	4.968	<0.001*	0.594	0.358	52.404	<0.001*
Utilization of emotions	0.158	0.065	2.714	0.007*				

B: the estimate; SE: standard error; T: t-test value; r: Pearson correlation coefficient; R²: regression coefficient; F: F-test (ANOVA); ANOVA: Analysis Of Variance. *Statistically significant at $p \leq 0.05$.

In addition, Table 6 reveals the regression coefficient value between Emotional Intelligence and its related dimensions as independent variables and overall critical thinking disposition as a dependent variable where $R^2 = 0.358$. This means that approximately 35.8% of the explained variance of critical thinking disposition among nursing students can be significantly predicted by Emotional intelligence and its related dimensions where the regression model is significant ($F = 52.404$, $p < 0.001$).

4. Discussion

4.1. Emotional Intelligence Level

The result indicated that slightly above half proportion of nursing students (54.9%) had high emotional intelligence level while 45.1% of them had a moderate level. This result indicates that nursing students can be regarded as emotionally intelligent and may have the ability to perceive, understand the emotion in others, regulate, manage, and harness emotion adaptively so; they could utilize this information to guide their thoughts and actions. Also, this result also could be related to the students' positive perception in the current study of the importance of Emotional Intelligence as a vital nursing skill that could help them to illustrate better ranges of interactive competencies and cooperation and work more effectively within the team.

Supporting this perceived importance of EI; Ibrahim et al., [25] stated EI skill sustain the regulation of own and others' emotions and assist the nursing students to adopt energetic and powerful adapting strategies when coping with issues while that inability to control emotions can lead to increase anxiety, stress and negatively affect the quality of care and emphasized, EI as a fundamental skill to nursing students. Also, Patterson and Begley [26] emphasized that students with EI skill anticipated to be more successful in the nurse-patient relationship and in all aspects of clinical training competencies as communication, presentation, problem solving and gaining patients' cooperation. Moreover, Agarwal and Chaudhary [27] highlighted that EI help in the personality maturation, consequently, it directs the person to make ethical decisions and act professionally regardless of his own interests.

Sharing the same findings on graduate students with high emotional intelligence, Kang [24] found that the graduate students in his study can be regarded as emotionally intelligent. Also, a study in India by Bhaskar et al., [28] found that the majority of respondents had high EI scores. In addition, Kaya et al., [1], Mahmoud et al., [29], and Beauvais et al., [30] found out those nursing students' emotional intelligence was at medium/moderate level. On contrary, a study by Faye et al., [31] has

revealed that more than 70% of the respondents had poor emotional intelligence.

4.2. Critical Thinking Disposition Level

The current study revealed that the highest proportion of nursing students had a moderate critical thinking disposition level. In this regard, it can be considered as a favorable result meaning that students will be careful when faced with problems in practice areas, make use of reasoning and objective evidence and be capable of taking on responsibility in problem-solving. In the same line, Sосу [10] clarified that a degree of both critical openness and reflective scepticism is required for an individual to have a disposition to important thinking and to be able to take the choice. What is more, Zhang and Lambert [32] indicated being analytical is about being attentive to situations which potentially create issues, tending to utilize reasoning and objective evidence when confronted with hard problems.

Congruent with our finding, graduate students in Kang's study [24] shown high overall critical thinking disposition, but moderate in reflective scepticism and critical openness. On the contrary, past studies have revealed inconsistent findings, Azizi-Fini et al., [5] found that nursing students had a low score of critical thinking. Also, Fidancı et al. [33] and Öztürk and Ulusoy [6] found that students had a low level of critical thinking disposition.

4.3. Emotional Intelligence and Critical Thinking Disposition per Academic Levels

Significant differences were found among nursing students across the academic levels regarding their perception of overall emotional intelligence as well as overall critical thinking disposition and in each of the related dimensions. Nursing students at the eighth level had the highest rating of these variables, while, nursing students at fourth level had the lowest rating of them. This result can be regarded as expected considering this discrepancy between the students across their academic levels might be related to the age and experience differences. One explanation could be that the acquisition of emotional intelligence and critical thinking requires a long time. It seems that when students are enrolled in clinical settings, their emotional, cognitive, critical thinking and humanistic skills increase. It is expected to develop more as students' year of study, experiences, professional knowledge and skills increase. In contrast, student at the fourth level are less young with no or very little clinical exposure and experience.

In the same line, Snowden et al., [34] stated, it is unequivocally recognized that age and experience assume

an essential part in EI acquisition. What is more, Kang [24] concluded that one's emotional intelligence may not really increment with age but rather may increment with more prominent experiential learning openings likewise, the certainty of the person in his/her psychological processes and his critical thinking disposition to secure and learn new things enhance with development and experience. Notwithstanding, Azizi-Fini et al., [5] reported no significant difference between the mean critical thinking scores of freshmen and senior nursing students. They suggested, making a balance between the course content and time available may be the first step in preparing the context for educators to assign more time to the development of the students' CTDs. In this regard, Moattari et al., [35] recommended, nurse educators ought to be set up to execute dynamic, student-centered, collaborative and problem-focused teaching strategies to foster the students' CTDs.

4.4. Correlation between Emotional Intelligence and Critical Thinking Disposition

The most prominent finding of the current study is the significantly quite strong positive correlation found between overall emotional intelligence and overall critical thinking disposition as well as between all related dimensions. Also, Regression coefficient value proved that emotional intelligence can contribute significant prediction of the critical thinking disposition. This seems to be good judgment and implied the more sincerely clever emotionally smart nursing students, the higher their manner towards basic reasoning and better their disposition closer to critical thinking. This result bolsters what is emphasized in the literature that emotional intelligence and critical thinking are features that should be considered together, and the quality of emotional intelligence can determine critical thinking disposition. In such regard, Ibrahim et al., [25] emphasized the necessity and importance of emotions in decision-making for proper clinical performance and enhancing skills necessary for nursing students. For this reason, it's miles essential to increase training packages and educational environments that enable college students to explicit their thinking, gain access to exact information among others and make effective decisions.

In a related context, Agarwal and Chaudhary [27] stated that EI enhances one's personality and reasoning to figure out what the right action. EI help in the personality maturation, consequently, it directs the person to think critically, take decisions and act professionally. Similarly, Kang [24] found that emotional intelligence and critical thinking disposition were positively correlated. Therefore, they could successfully apply sound judgment and reasoning to situations and circumstances in the process of shaping an emotional reaction to particular situations. Also, Stedman and Andenoro [36] found a positive relationship between emotional intelligence and critical thinking disposition in undergraduate students. Similarly, Ebrahimi & Moafian, [37]; Afshar & Rahimi [38] and Certel et al., [39] revealed a significant positive relationship between these variables. On contrary, critical thinking ability and emotional intelligence were negatively correlated in the

study of Murensky [40]. A recommendation is identified for examining a third variable such as (academic achievement, a locus of control, self-efficacy and academic performance) as it might have influenced this association.

5. Conclusion and Recommendation

In summary, this study was one of the very few studies in Saudi Arabia that examined the relationship between emotional intelligence and critical thinking disposition in the context of undergraduate nursing students. The results showed that nursing students can be regarded as reasonable emotionally intelligent with a moderate disposition toward critical thinking. It can be concluded that nursing students have the tendency to learn from their past experiences and be questioning of evidence. Likewise, they would tend to be actively open to new ideas, serious in evaluating these ideas and modifying their thinking in the light of convincing evidence. Nursing students differ significantly across academic levels regarding their perception of both emotional intelligence and critical thinking disposition levels. This difference might be related to the age and exposure to clinical experience. Emotional intelligence and critical thinking disposition were positively correlated, and emotional intelligence can contribute significant prediction of critical thinking disposition, this meant that the more emotionally intelligent nursing students, the higher their disposition towards critical thinking.

5.1. Research Strengths & Limitations

The present study hopefully might help to enrich our understanding of EI and CTDs constructs and thus enhance the existing research literature. However, readers should approach this study with caution since its generalizability would be limited to the convenience sample of the nursing students in one college of nursing setting and may not be reflective of all nursing students. The emotional intelligence and critical thinking disposition were measured using self-report methods as subjects' perceptions, not actual behaviors.

5.2. Recommendations

In conclusion, the results have important implications and recommendations in both nursing education and practice. With this relationship between emotional intelligence and critical thinking disposition, they ought to be considered for more inclusion in the undergraduate and graduate nursing curricula which can afford the potential to improve both clinical nursing performance and patient outcomes. This incorporation can be done without major revisions to the curriculum. To foster these skills, Nurse educators, have to apply various dynamic strategies such as; the inclusion of reflective learning experiences, simulation, supportive supervision, mentorship, modeling, and the use of video for observation and feedback.

5.3. Future Researches

In mild of these results, further study should be preceded as longitudinal because development of both

skills requires a long time. Educational training courses, workshops, and seminars should be prepared specifically for all academic levels for more development and enhancement of emotional intelligence and critical thinking and evaluate the effect of implementing these intervention programs to develop and enhance nursing students' EI and CTDs abilities. Replication of the present study on a larger sample, different settings and courses is required. Also, a third variable also recommended to be examined such as (academic achievement, a locus of control, self-efficacy and academic performance) as it might influence this association.

Declaration of Conflicting Interests

The Authors declare that there is no conflict of interest.

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