Original Article :

Measuring Emotional Intelligence Among Nursing Students in Saudi Arabia: A Quantitative Cross-Sectional Study

Bader A. Alrasheadi [1*]

1. Department of Nursing Administration, College of Nursing, Majmaah University, Majmaah, 11952, Saudi Arabia

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Corresponding Author:
Bader A. Alrasheadi, Department of Nursing Administration, College of Nursing, Majmaah University, Majmaah, 11952, Saudi Arabia. Email: b.alrasheadi@mu.edu.sa

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Abstract

Background and Aims:
Emotional intelligence (EI) facilitates the efficient management of the emotions of the self and others in a harmonious manner. Optimal EI skills can help nursing students master their socio-occupational interactions during intensive skills training sessions and the delivery of patient care. In this exploratory research, EI level and its relationship with socio-demographic characteristics were investigated among nursing students in Saudi Arabia.

Methods:
A quantitative cross-sectional study involving 292 nursing students from Majmaah University, Saudi Arabia was performed. The participants completed the Schutte Self-Report Emotional Intelligence Test and socio-demographic sheet from March to April 2025. Descriptive and inferential statistical tests were used .

Result:
Most of the participants (80.1%) recorded a low-to-moderate level of EI. The EI scores showed age/marital status-related significant differences ($p < 0.05$). The dimension of appraisal and expression of emotions in the self and in others recorded highest, while the dimension related to the utilization of emotions in solving problems showed lowest scores. EI was highest among master's students for education level group, 50 years old and above had lowest score among age groups, and divorces had highest score among social status group.

Conclusion:
The findings show vital information that nursing educators need to build their EI competencies and establish EI education programs for their teaching curricula. Educational institutions need to develop specific training programs and workshops that address the research findings to help students from different socio-demographic groups who have distinct EI profiles.

Keywords:
Emotional intelligence, nursing students, Saudi Arabia, self-awareness, social awareness, self-regulation

Introduction:

The nursing profession operates in a difficult environment that requires nurses to build their clinical abilities and emotional and interpersonal competencies[1]. Nursing teams face various challenges throughout their shifts because they need to manage patient pain and make critical decisions under pressure while maintaining patient, family, and healthcare team communication[2]. Nursing student education needs to move past teaching technical abilities because students require the development of essential non cognitive skills that help them maintain resilience and deliver effective patient advocacy[3]. The development of emotional intelligence (EI) is a vital factor that determines professional success and enables high-quality care delivery while supporting personal wellness.

According to Salovey and Mayer (1990), EI is the ability to recognize and control personal emotions and understand and handle the emotions of others[4]. It consists of four linked components that enable emotional identification through self-awareness and emotional control through self-regulation and social awareness for empathy and relationship management for conflict resolution and bond creation. Healthcare professionals need these abilities to conduct effective pain management and compassionate news delivery and to maintain their performance during stressful situations.

For nursing students to successfully transfer from novice learners to competent professionals, the development of EI is a must. Naturally, nursing education is stressful because nursing students have to cope with stringent academic requirements, exhausting clinical rotations, experiencing human tragedy, and the continuous fear of committing clinical errors[5]. Students with higher levels of EI are usually well prepared to cope with the surrounding environment, manage their anxiety, and utilize their feelings as a source of information rather than as a barrier.

There is a direct relationship between the ability to manage stress effectively, overcome academic and clinical obstacles, and communicate proficiently and a student's emotional skill set. As mentioned in the rationale of this study, detecting students with low EI levels is a primary concern, as they are "at risk of facing challenges in managing stress, overcoming obstacles, communicating with others, and responding to others' emotions"[6]. Teachers who identify low EI levels in students at an early stage can choose suitable materials while providing individualized assistance. These improvisations lower burnout, improve retention, and develop emotional competencies that support professional

development. The implementation of these EI-related findings can be used to plan an effective curriculum structure[5].

Better interpersonal relationships with features of empathy, adequate listening ability, and suitable emotional responses promote excellent therapeutic communication with patients, relatives, and other stakeholders. A high EI level in nurses helps them understand patients' non-verbal communication and gestures, facilitating personalized care delivery in accordance with the emotional requirements and protecting the advocacy of patient rights. Nursing services achieve better efficiency and higher quality through this method3. The educational environment needs to measure and develop this fundamental skill because it directly affects the delivery of safe, patient-focused care.

Research on EI in nursing practice has shown different results based on the cultural background and educational environment of the participants[7]. Studies conducted in Europe, North America, and Asia have used validated assessments, including the Schutte Self-Report Emotional Intelligence Test (SSEIT) questionnaire, to investigate EI relationships with student nurse performance. The educational and healthcare delivery environments, together with their teaching methods and social norms about emotional expression and clinical settings, affect how people reveal and measure their EI.

Different research conducted showed that there are existing studies on EI among Saudi Arabian nursing students[8-11]. However, according to practices of the public health research, experts have agreed on the necessity of investigating the factors affecting recent cohorts of nursing students' emotional management skills in this area. Educational leaders at Saudi universities need to understand trends in recent cohorts of local data and fundamental information to create curricula and culturally specific intervention methods.

The present study investigated the current EI levels of nursing students studying at Saudi universities at both the undergraduate and postgraduate levels. The study used a quantitative cross-sectional survey design to study EI relationships with socio-demographic factors that addressed the identified knowledge deficit. The research data will enable policymakers to create educational policies and curriculum improvements and to support programs that enhance the emotional readiness and professional competence of Saudi Arabia's future nursing workforce.

Methods:

Study Design:

A non-experimental cross-sectional

survey design was used in this quantitative study to quantify EI. The research design suited the investigation of EI dominance levels and their relationship with the socio-demographic characteristics of Saudi university nursing students at one specific point in time.

Samples/Participants

This study aimed to investigate all nursing students who attended Majmaah University, Saudi Arabia at the undergraduate and postgraduate levels. The participants were selected through non-probability convenience sampling. The data were processed through cleaning and filtering procedures to obtain 292 nursing students who became the research sample because they were readily available for studying EI in this specific academic environment. Inclusion criteria was students enrolled in nursing program at Majmaah University at the time of the study. Exclusion criteria was students enrolled in non-nursing programs, and those students enrolled in nursing program at Majmaah University who have been absent from the classes from the start of the semester. The estimated sample size was 274 for 95% confidence interval, 5% margin of error, population proportion of 50% and population size of 950 (number of students registered in nursing program at Majmaah University at the time of the study).

Instruments

The researcher conducted the study using an online self-administered questionnaire, which the participants accessed through Google Forms. The questionnaire contained two distinct parts that gathered socio-demographic information and EI assessment data.

1. Socio-demographic Data

The first section of the questionnaire contained questions that gathered the socio-demographic data needed to study the second research objective about the association between EI and the socio-demographic variables. These variables included age (categorized as 20–30, 31–40, 41–50, and 51 and above), gender (male/female), marital status (single, married, divorced, widowed), and current level of study (bachelor's degree, master's degree, doctoral degree).

2. Schutte Self-Report Emotional Intelligence Test (SSEIT)

In this study, the SSEIT was used to measure EI levels. The SSEIT is also commonly referred to as the Self-Report Emotional Intelligence Scale (SREIS). The SSEIT/SREIS was developed by Schutte et al. (1998) and is based on the foundational

model of EI proposed by Salovey and Mayer (1990). This questionnaire has been extensively used in research and has 33 Likert scale items, ranging from 1 (strongly disagree) to 5 (strongly agree). Dixit et al., 2025, provided detailed interpretation of the SSEIT total score: High (122-165) Moderate (78-121), and Low (33-77).

The SSEIT has three dimensions:

1. Appraisal and expression of emotion in the self and in others.
2. Regulation of emotion in the self and in others.
3. Utilization of emotion to facilitate performance.

The scores of all 33 items were added to generate a total score of 33–165, with higher scores indicating a higher level of perceived EI. Similarly, three dimension scores were calculated by adding the item scores of the respective factors[12,13]. The psychometric validity of the SSEIT has been investigated in various populations across the world, making it a reliable tool for this study[12]. The survey questionnaire was presented in English and Arabic. This strategy has been used previously to ensure clarity and cultural appropriateness in Saudi study participants[14]. The study was conducted after obtaining permission to use the SSEIT from the copyright holders.

Data Collection

The data collection was conducted in March and April 2025. The questionnaire came in both physical and digital formats, which the students received through their course instructors. The research team obtained completed questionnaires from the students after their scheduled classes. The research goals and potential results were thoroughly explained to the students before they began their participation. The students received full information about the study before providing their consent to participate and starting the questionnaire process.

Data Analysis

Data analysis was performed using IBM SPSS Statistics 27 software. Descriptive statistics, specifically means, standard deviations, frequencies, and percentages, were employed to characterize the sample's socio-demographic features and to present the scores on EI and its constituent dimensions. An independent samples t-test and a one-way analysis of variance (ANOVA) were used to assess the differences in EI levels across the socio-demographic variables.

Ethical Considerations

The study was approved by the institutional review board of Majmaah

University (File Number: MUREC-Feb.16/COM-2025/103). It was conducted in compliance with the Helsinki Declaration and the provisions of the latest revisions of 2024[15]. The participants were informed that participation was voluntary, that they were free to withdraw at any time, and that they had complete protection from bias and retribution. The survey method was implemented in a secure manner to ensure the complete privacy and anonymity of all participants.

Results:

Socio-demographics

The socio-demographic features of the participants are summarized in Table 1. As expected, the majority of the students (70.5%) were in the age range of 20–30 years. Gender representation was balanced, with 47.3% female participants. Most of the students were single (65.8%) and registered in undergraduate programs (70.5%).

Table 1: Descriptive Summary of Nursing Students' Demographic Information [N = 292].

Demographics	Frequency	Percent
Age		
20–30 years	206	70.5
31–40 years	70	24.0
41–50 years	14	4.8
51 years and above	2	.7
Gender		
Female	138	47.3
Male	154	52.7
Marital Status		
Single	192	65.8
Married	96	32.9
Divorced	2	.7
Widowed	2	.7
Current Level of Study		
Bachelor's degree	202	69.2
Master's degree	84	28.8
Doctoral degree	6	2.1

EI: Descriptive trend

The self-reported measures of EI in the participants are summarized in Table 2. The average EI total score was 126.74 ± 13.51 (range: 84–159). The average values of the three dimensions of EI—appraisal and expression of emotions in the self and others, regulation of emotion in the self

and others, and utilization of emotions in solving problems—were 49.42 ± 5.30, 40.30 ± 5.17, and 37.02 ± 4.98, respectively. The majority of students (n = 208, 71.2%) possessed a moderate EI level.

Table 2: Emotional Intelligence and Its Dimension Scores in Nursing Students [N = 292].

EI and its dimension scores	Min	Max	Mean ± SD	Frequency (%)
EI total score	84	159	126.74 ± 13.51	
Low level				26 (8.9)
Moderate Level				208 (71.2)
High level				58 (19.9)
EI dimension score				
Appraisal and expression of emotions in the self and others	31	62	49.42 ± 5.30	
Regulation of emotion in the self and others	24	50	40.30 ± 5.17	
Utilization of emotions in solving problems	20	50	37.02 ± 4.98	

EI: Differences Across Socio-demographic Variables

The results of the inferential statistical analyses examining the differences in EI scores across the four socio-demographic variables are presented in Table 3. A one-way ANOVA revealed statistically significant differences in EI scores based on age, $F(3,288) = 3.556$, $p = .015$. The effect size for this difference was small, with age accounting for 3.6% of the variance in scores ($\eta^2 = .036$). The mean scores for the age groups of 20–30 years (M = 126.23), 31–40 years (M = 128.60), and 41–50 years (M = 128.86) were clustered together, while the 51 years and above age group had a markedly lower mean (M = 99.00). The post hoc results revealed that the 51 years and above age group scored statistically significantly lower than all the other groups: 20–30 years ($p < .001$), 31–40 years ($p < .001$), and 41–50 years ($p < .001$). There were no significant differences found in the age groups of 20–30, 31–40, and 41–50 years.

A highly significant difference was found for marital status, $F(3,288) = 5.636$, $p < .001$. This variable explained 5.5% of the variance in EI ($\eta^2 = .055$), which is considered a small to medium effect size. The highest mean scores were observed in the divorced (M = 140.00) and married (M = 129.79) groups, followed by the single group (M = 125.34). The widowed group had the lowest mean score (M = 101.00). Post hoc tests revealed several significant pairwise differences. Widowed students had a significantly lower EI score than single ($p = .049$), married ($p = .013$), and divorced ($p = .018$) students. Married

students (M = 129.79) scored significantly higher than single students (M = 125.34, p = .037).

The current level of study showed a highly significant relationship with EI scores, F(2,289) = 6.779, p = .001,η^2 = .045. This suggests that approximately 4.5% of the total variance in EI score was accounted for by the current level of study, indicating a small to medium effect size. The post hoc analysis indicated that the master's degree group (M = 125.33) scored significantly higher in EI than the bachelor's degree group (M = 130.83), p = .004. Moreover, the master's degree group scored significantly higher in EI (M = 130.83) than the doctoral degree group (M = 117.00), p = .037. The difference between the bachelor's degree group and the doctoral degree group was not statistically significant (p = .284).

By contrast, the independent t-test for gender indicated no statistically significant difference in EI scores between female (M = 125.52) and male (M = 127.83) students, t(290) = –1.461, p = .145. The magnitude of the difference was assessed using Cohen's d, which was reported as –.171. This represents a small effect size, suggesting a minimal practical difference in EI scores between the two gender groups.

Table 3: Differences in Emotional Intelligence Levels According to Socio-demographic Variables.

Socio-demographic variable	Mean ± SD	t/F values	p-value	Eta-squared
Age		F(3,288) = 3.556[a]	.015[*]	.036
20–30 years	126.23 ± 13.955			
31–40 years	128.60 ± 11.776			
41–50 years	128.86 ± 11.508			
51 years & above	99.00 ± .000			
Gender		t(290) = –1.461[b]	.145	–.171
Female	125.52 ± 12.737			
Male	127.83 ± 14.118			
Marital status		F(3,288) = 5.636[a]	< .001[**]	.055
Single	125.34 ± 13.434			
Married	129.79 ± 12.854			
Divorced	140.00 ± .000			
Widowed	101.00 ± .000			
Current level of study		F(2,289) = 6.779[a]	.001[**]	.045
Bachelor's degree	125.33 ± 13.356			
Master's degree	130.83 ± 12.573			
Doctoral degree	117.00 ± 18.740			

Note: a. One-way ANOVA test; b. Independent t-test; *. Significance level at a p-value of 0.05; **. Significance level at a p-value of 0.01.

Discussion:

This study found a moderate level of EI scores and its three dimensions among Saudi nursing students. The EI level differed significantly across the three socio-demographic characteristics of age, marital status, and educational level. The findings have policy-related implications for foreseeing the implementation of strategies to increase the EI level of Saudi nursing students. The socio-demographic-related differences may better be managed to help in the provision of quality of care by these students, who would soon be professional nurses[16]. The self-reported EI level based on mean of SSEIT score in this study is very similar to that among American nursing students 126.45, range 84–156, Ethiopia 125.82 ± 18.17, higher than the Slovenian nursing, and lower than reported in Iranian nursing students 151.68 ± 17.47[17-20].

EI: Descriptive Trend

The finding of moderate-level EI among Saudi nursing students is similar to previous reports. Almansour also reported a moderate-to-high level of EI in Saudi nursing students [21] and that the EI level differed across age and civil status[21]. Similarly, studies conducted on Saudi nursing students in different regions of the country reported a moderate-to-high-level of EI[8-10]. These findings are based on subjective and self-reported accounts, but if they are corroborated by better research designs, they may indicate a desired EI level among Saudi nursing students, which may be supplemented by strategies to increase it[3].

In this study, the nursing students scored highest on the dimension of appraisal and expression of emotions in the self and in others and lowest on the dimension related to the utilization of emotions in solving problems. This finding is reassuring, as according to Bakr and Sanaa, the appraisal of emotion is a key aspect of EI among nurses[22]. However, a concerning finding in the current study is that the Saudi nursing students scored lowest in the utilization dimension, indicating a possible deficit in the application of emotional information to support cognitive processes, such as stress management and clinical problem solving. An educational intervention using field-based training sessions is suggested to increase this aspect among Saudi nursing students. This is important because, according to Bakr and Sanaa, the utilization dimension is also a key aspect of EI among nurses[6,22].

EI: Differences Across Socio-demographic Variables

In this study, EI showed significant differences across three socio-demographic characteristics: age, marital status, and current level of study. In this study, the older

age group of nursing students that is, those 50 years old and above had lower EI than the three other younger groups of cohorts. Previous reports on the age EI relationship are contradictory, with some showing a relationship between the two variables and others finding no such association[9,23-25]. EI is a multifactorial construct, and some of its facets slightly increase with the experience gained as humans age. However, some of its features require training for a practical increase[26]. Moreover, the age–EI trend in this study could be affected by the low sample size in the older cohort, influencing the power of the outcome.

EI was highest in the divorced group, followed by the married, single, and widowed groups. There are contradictory reports of the trend of EI among married and single people in previous studies. Cerit and Beser reported that EI was higher in Turkish singles than in married people[25]. However, many studies have supported that being married or in a committed relationship positively influences EI because of the consistent requirements for relationship management, compromise, and mutual empathy[23,27,28]. The widowed group scored the least in this study on the EI level. This could be related to the emotional burden associated with a recent or significant loss, negatively affecting the metacognitive awareness of EI. A study on Italian adults comprising mostly women (83%) reported that EI did not vary across civil/marital status groups[29]. This influence of gender-related civil status on the level of self-reported EI needs further investigation.

EI was highest among master's students, followed by bachelor's and doctoral students. Apparently, this is against the logical theoretical trend of EI advancing at the academic level[3.30]. This trend may imply that the master's cohort has gained sufficient professional experience with the optimal attainment of emotional skills. However, the EI level takes a downward spiral because of the burnout or increased stress associated with the rigorous research demands of a doctoral program. Indeed, there are studies that have reported the negative effects of advancing years of study and academic research on EI. Therefore, such a group of students may benefit from supporting counseling and management interventions[5].

Limitations of the Study

This study has some limitations that must be considered when deriving generalization from the findings. First, the study has some design-related weaknesses, such as having a cross-section design, having a non-representative sampling, and using self-reported measures. Second, some limitations arise from study-specific factors, such as some socio-demographic categories

not having a sufficient sample for a proper power estimation of the differences in the mean tests. Future studies should also assess emotional intelligence using robustly validated measures in the Saudi population.

Future Perspectives

Longitudinal studies with a more robust design should investigate the trends found in this study. If validated by longitudinal studies, they can be used as a corrective measure to increase the low score in the utilization dimension using field-based training for integrating experiential learning, simulation-based scenarios, and reflective practice sessions to increase this aspect among Saudi nursing students. In addition, these corrective measures should have a differential impetus to focus on and mitigate socio-demographic-related low EI levels.

Conclusion:

Saudi nursing students were found to have a moderate level of EI scores and its three dimensions, which had a socio-demographic differential distribution across three socio-demographic characteristics: age, marital status, and educational level. As the Saudi nursing students scored lowest in the utilization dimension of EI, they may benefit from educational interventions using field-based training to support cognitive processes, such as stress management and clinical problem solving. These corrective measures should also have a differential impetus to focus on and manage socio-demographic-related discrepancies in EI among Saudi nurses.

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