

Original Article

Emotional intelligence and perceived stress among students in Saudi health colleges: A cross-sectional correlational study

Mahmoud A. Shahin, Ph.D

Critical Care Nursing, Al-Ghad International Colleges for Applied Medical Sciences, Qassim, KSA

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المخلص

أهداف البحث: لا يوجد حتى الآن سوى القليل من المعرفة فيما يتعلق بالإجهاد المدرك والذكاء العاطفي بين الطلاب السعوديين المتخصصين في العلوم الصحية. تهدف هذه الدراسة إلى تقييم الارتباطات والاختلافات بين الذكاء العاطفي والإجهاد المدرك بناءً على التركيبة السكانية الاجتماعية بين طلاب العلوم الصحية في كلية العلوم الصحية التطبيقية السعودية.

طرق البحث: استخدمنا في هذه الدراسة تصميم ترابط وصفي مقطعي. تم أخذ عينة مناسبة مكونة من 274 من طلاب التمريض والطوارئ. تمت دعوة المشاركين لإكمال استبانة تعباً ذاتياً شملت التركيبة السكانية، والذكاء العاطفي (اختبار أدوات الذكاء)، والإجهاد المدرك (مقياس الإجهاد المدرك).

النتائج: كان مستوى الذكاء العاطفي لدى غالبية المشاركين (97.1%) من متوسط إلى مرتفع (متوسط = 50.58 على مقياس يتراوح بين 15-75)، خصوصاً طلاب التمريض والطلاب في السنتين الأكاديميتين الأولى والثالثة. بشكل عام، كان لدى الطلاب مستوى متوسط من الإجهاد المدرك (متوسط = 1.75 على مقياس يتراوح بين 0-4) مع مستوى مرتفع من الإجهاد المرتبط بالواجبات وأعباء العمل. تم الكشف عن ارتباط سلبي ليس ذا أهمية بين الذكاء العاطفي والإجهاد المدرك.

الاستنتاجات: في هذه الدراسة، لم يكن هنالك فرق ذو دلالة إحصائية في الذكاء العاطفي على أساس الجنسية، والجنس، أو الرضا عن التخصص. لم نلاحظ وجود اختلاف كبير في الإجهاد المدرك بناءً على جنس الطلاب، أو جنسيتهم، أو تخصصهم، أو الرضا عن التخصص أو السنة الأكاديمية. ومع ذلك، ارتبطت المستويات العالية من الذكاء العاطفي وإن لم تكن ذات دلالة إحصائية، بمستوى أقل من الإجهاد المدرك. ومن الضروري تعليم طلاب العلوم الصحية عن الذكاء العاطفي ووسائل التعرف والتغلب على الضغوطات بينهم. يجب دمج المعلومات المتعلقة بالذكاء العاطفي والإجهاد المدرك في مناهج العلوم الصحية.

الكلمات المفتاحية: العواطف؛ الذكاء العاطفي؛ التمريض؛ خدمات الطوارئ؛ الإجهاد المدرك؛ مناهج العلوم الصحية

E-mail: mahmood81us@yahoo.com

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Abstract

Objectives: To date, little knowledge exists about perceived stress or emotional intelligence among Saudi students specialising in health sciences. This study uses sociodemographic factors to assess the correlations and divergences between emotional intelligence and perceived stress among health-science students in Saudi applied health-science colleges.

Methods: The present study adopted a cross-sectional, descriptive correlational design and recruited a convenience sample of 274 nursing and paramedic students. The participants were invited to complete a self-report questionnaire, which covered demographic factors, emotional intelligence (the MindTools test), and perceived stress (the Perceived Stress Scale).

Results: Almost all participants (97.1%) had average-to-high levels of emotional intelligence (mean = 50.58 in a 15–75 ranged scale); this was particularly true for nursing students and students in their first and third academic years. Overall, the students had a moderate level of perceived stress (mean = 1.75 in a 0–4 ranged scale), with assignments and workload causing the highest levels of stress. A negative non-significant correlation was found between emotional intelligence and perceived stress.

Conclusions: The research findings show that emotional intelligence does not differ significantly by nationality, gender, or specialty satisfaction. The students' gender, nationality, specialty, specialty satisfaction, and academic year were not significantly associated with levels of perceived stress. However, higher (although non-significant) levels of emotional intelligence were associated with lower levels of perceived stress. It is therefore

essential to educate health-science students about emotional intelligence and teach them to identify and overcome stressors. Information about emotional intelligence and perceived stress should be incorporated into health-science curricula.

Keywords: Emotions; Emotional intelligence; Health-science curricula; Nursing; Paramedic; Perceived stress

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Introduction

The term, 'perceived stress' refers to a person's emotions or thoughts about how much stress he or she experiences at a particular point in time or over a given timespan.¹ High levels of stress are commonly found among university students, particularly those specialising in health-related fields.² An Indian study found that 82% of participating nursing students reported a moderate level of stress. Key stressors included interface concerns, the academic load, the attitude of other professionals toward nursing, a lack of free time, and a fear of examinations.³ In a study of nursing students in Brazil, most participants presented low levels of stress during general course activities. Their main stressor was a lack of time for leisure, family, and extracurricular activities. Additional stressors included professional training, professional communications, and time management.⁴

Regarding the prevalence of stress among health-science students, 63.7% of 279 health-science students in Ethiopia were found to experience perceived stress.⁵ In KSA, although one study found that only 33.8% of medical students experienced severe stress,⁶ a second study showed that 71% of medical students experienced severe stress.⁷ In line with the latter results, an Indian study identified high levels of perceived stress among medical students.⁸ An Iranian study found high levels of perceived stress among health-science students, with medical students experiencing more perceived stress than paramedical students.⁹ To foster the psychological and physical well-being of college students, it is crucial to recognise and address the problem of stress during undergraduate studies. Students exposed to continual and persistent stress may develop negative physical, psychological, or even spiritual health consequences.²

Emotional intelligence is a relatively new concept, denoting the ability, capacity, skill, or self-perceived capacity to identify, assess, and manipulate one's own feelings and those of other people or groups.¹⁰ People with high levels of emotional intelligence are very self-aware and able to sense the feelings of others. They are sensitive, flexible, and optimistic. Emotional intelligence consists of various proficiencies associated with emotional awareness and self-control; it can help individuals manage their feelings.¹¹ For this reason, recent research has linked emotional intelligence to feelings of stress, arguing that it plays a vital role in determining

levels of stress and perceived stress, especially among health-science students and healthcare professionals.¹²

To date, few studies have examined perceived stress or emotional intelligence among undergraduate students specialising in health-related fields, particularly in KSA and the Middle East. It is thus of great importance for contemporary-nursing researchers to study and understand the impact of perceived stress and emotional intelligence among health-science students. Exposing students to the concepts of emotional intelligence and perceived stress may strengthen their ability to anticipate and cope with stress, thus helping them succeed in their academic and clinical training. This study serves as both a guide and a reference, aiming to improve knowledge and broaden future clinical and academic research in this field.

The present study has assessed perceived stress and emotional intelligence among undergraduate students at Saudi health-science colleges. Its objectives include exploring the demographic characteristics of health-science students; assessing their levels of perceived stress and emotional intelligence and any correlations between them; and identifying differences in perceived stress and emotional intelligence, based on the students' sociodemographic characteristics.

Materials and Methods

Study design and setting

The present research, a cross-sectional, descriptive correlational design, was carried out at the Al-Ghad International Colleges for Applied Medical Sciences, where participating health-science students were asked to complete a self-report questionnaire. These colleges have many branches, distributed across large cities throughout KSA; they hold leadership positions in nursing, radiology, laboratory, and paramedic specialties in KSA.

Study sample

A non-probability total-sampling procedure – specifically, convenience sampling – was used to select the study sample. Data were gathered from accessible undergraduate students enrolled in health specialties at various levels. Both male and female nursing and paramedic students were included in the study sample, as these specialties are offered by almost every college branch. At the time of the study, 429 registered undergraduate students were studying nursing or paramedicine. The questionnaire link was sent to 397 regular students with correct contact information; of these, 274 students agreed to complete the questionnaire and enrolled in the study, a response rate of 69%. An initial power analysis was performed, using G*Power software to calculate the sample size (power = 0.95, alpha = 0.05, effect size = 0.05).¹³ The required sample size was set at 155 students to ensure confidence in the findings.

Inclusion criteria

- Students at any level enrolled in a nursing or paramedic specialty, who were
- Willing to participate in the study.

Exclusion criteria

- Interns, graduates, and students enrolled in programs other than nursing or paramedicine.

Data-collection tool

A self-administered structured questionnaire, based on the extant literature and available resources, was used to collect data. The questionnaire was structured as a three-part checklist. The first section focused on the respondents' demographic profiles, while the second used the MindTools test to assess their emotional intelligence.¹⁴ This tool incorporates the work of Goleman (1996) and consists of 15 questions, ranked using 5-item Likert scale, with responses ranging from 1 (not at all) to 5 (very often).¹⁵ The higher the respondent's total score, the higher his or her emotional intelligence. Based on their total scores, students were classified into three categories: low (15–34), average (35–55), and high emotional intelligence (56–75). The emotional-intelligence tool was validated as relevant and comprehensive (i.e., with good content validity) by three doctorate-level nursing specialists. A statistical analysis was used to measure the tool's reliability (i.e., internal consistency), resulting in a high Cronbach's alpha coefficient (0.81).

The final section of the questionnaire assessed the students' perceived stress levels, using the Perceived Stress Scale (PSS). This tool was originally developed by Sheu¹⁶ in 1997 to assess perceived stress among Taiwanese nursing students. It consists of 29 items that measure the extent to which respondents perceive their lives to be 'unpredictable, uncontrollable, and overloading'. Each item is rated using a 5-point Likert scale, with responses ranging from 0 (never) to 4 (very often). A higher mean score on the PSS indicates a higher level of stress. Based on the students' mean scores, their levels of perceived stress were classified as low (0–1.33), moderate (>1.33–2.66), and high (>2.66–4). The tool has six subcategories, corresponding to the following six potential stressors: taking care of patients; teachers and staff; assignments and workload; peers and daily life; lack of professional knowledge and skills; and the environment.¹⁶ According to Sheu (2002,¹⁷ the internal consistency reliability of the PSS was 0.89, an acceptable level of validity, while the content validity index (CVI) was 0.94, a high level of validity.

Procedure and data analysis

The data-collection process was completed over the course of two months (from December 2019 to January 2020). Electronic questionnaires were sent to nursing and paramedical students using Google Forms; the link gave participants sufficient time to read the questions and answer them appropriately. A researcher collected the completed forms for statistical testing and analysis. After the data were tabulated, scored, and analysed, descriptive and inferential statistics were produced. The collected data were analysed using SPSS version 25.0.¹⁸ No missing data were expected, as participants had to answer every question before moving to the next. The Kolmogorov–Smirnov normality test

revealed a significance level of less than 0.05, showing that this dataset did not follow a normal distribution. Nonparametric tests were thus required. The Kruskal–Wallis test was used to determine significant differences by academic year for both emotional intelligence and perceived stress; the Mann–Whitney U test assessed differences between two groups of independent samples.

Piloting the tool

To ensure the clarity, feasibility, and quality of the data-collection tool, the questionnaire was tested in a pilot study with 30 students, using the same inclusion criteria. These students were included in the final sample, as no modifications were required to the pilot study.

Ethics and human subjects' protection

Free access to the MindTools emotional-intelligence-assessment tool is available online; Permission to use the tool is explicitly provided on the MindTools permission page.¹⁴ Permission was also obtained to use the PSS.¹⁶

Results

The tables and graphs below present the study results. **Table 1** includes the participants' sociodemographic characteristics. The study sample of 274 students had a response rate of 69%; nursing students made up more than half the sample ($n = 146$). Approximately two-thirds of the participants (68.2%) were female, with a higher percentage of women in the field of nursing. The vast majority of participants were Saudi nationals (84.7%). Of the student participants, 25.9% were first-year students, 31% were second-year students, 20.4% were third-year students, and 22.6% were fourth-year students. More than half were satisfied with their choice of specialty (58.8%), with nursing students reporting a slightly higher level of satisfaction than paramedics. The participants' mean age was 20.5 ± 2.63 years, with an overall age range of 17–30 years (**Figure 1**).

Figure 2 shows the distribution of emotional intelligence among participants. The mean emotional-intelligence score for the total sample was 50.58 ± 7.235 . Based on the three classifications of emotional intelligence (low = 15–34; average = 35–55; high = 56–75; **MindTools.com**, 2008), most participants (73.4%) had average emotional intelligence, 23.7% had high emotional intelligence, and only 2.9% had low emotional intelligence.

A test of normality, used to compare the participants' mean emotional-intelligence scores by demographic factors, revealed that demographic factors based on emotional-intelligence scores did not follow a normal distribution, according to the Shapiro–Wilk test. As **Table 2** shows, the nursing students received significantly higher scores than the paramedical students on the emotional-intelligence scale ($p < 0.001$). Although students who were satisfied with their academic specialties scored higher on the emotional-intelligence scale than those who were not satisfied, this difference was not statistically significant. There was likewise no statistically significant difference in the mean emotional-intelligence-scale scores by nationality or gender;

Table 1: Sociodemographic characteristics (N = 274).

Sociodemographic factors		Specialty of Students (N = 274)				Total	
		Nursing (n = 146)		Paramedic (n = 128)		n	%
		n	%	n	%		
Gender	Male	40	27.4%	47	36.7%	87	31.8%
	Female	106	72.6%	81	63.3%	187	68.2%
Nationality	Saudi	126	86.3%	106	82.8%	232	84.7%
	Non-Saudi	20	13.7%	22	17.2%	42	15.3%
Educational Year	First year	14	9.6%	57	44.5%	71	25.9%
	Second year	51	34.9%	34	26.6%	85	31.0%
	Third year	26	17.8%	30	23.4%	56	20.4%
	Fourth year	55	37.7%	7	5.5%	62	22.6%
Satisfaction about specialty	Satisfied	87	59.6%	74	57.8%	161	58.8%
	Dissatisfied	59	40.4%	54	42.2%	113	41.2%

Abbreviation: N= Sample size, n = frequency, % Percent.

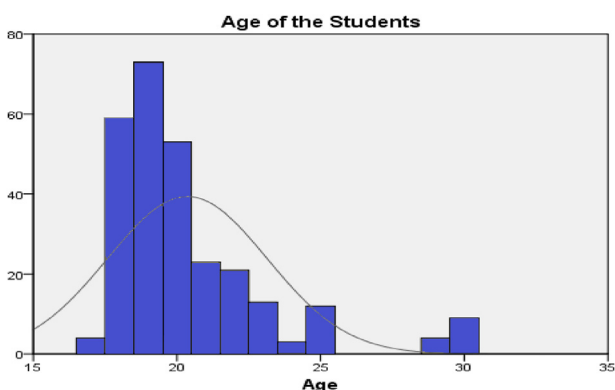


Figure 1: Age of participants (N = 274).

however, women and Saudi nationals had slightly higher mean emotional-intelligence scores.

A significant difference was detected in the participants' mean emotional-intelligence scores by academic year ($p < 0.001$). A Mann–Whitney test was used to compare student samples from every two academic years to detect the cause of this difference. The emotional-intelligence mean

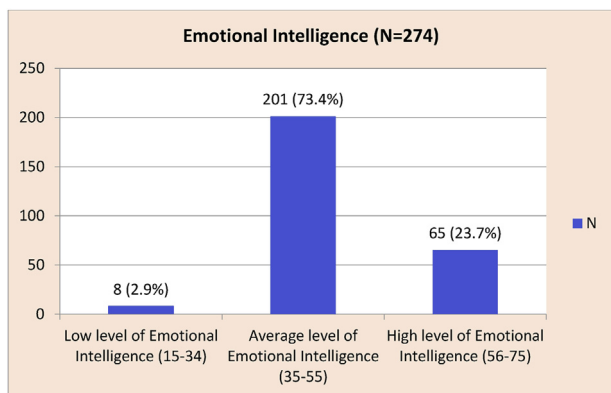


Figure 2: Categorical distribution of participants' emotional-intelligence scores (N = 274).

Table 2: Comparing emotional intelligence by sociodemographic factors (N = 274).

Sociodemographic Factors	n	Mean Rank	Test	P. value
Nursing	146	113.68	Mann–Whitney	<0.001**
Paramedic	128	164.67	U = 5866	
Satisfied	161	142.83	Mann–Whitney	0.183
Dissatisfied	113	129.90	U = 8238	
Saudi	232	138.39	Mann–Whitney	0.661
Non-Saudi	42	132.57	U = 4665	
Male	87	135.86	Mann–Whitney	0.815
Female	187	138.26	U = 7991	
First year	71	168.42	Kruskal–Wallis	<0.001**
Second year	85	107.45	Test Chi-	
Third year	56	170.59	Square = 38.645	
Fourth year	62	113.41		

**Significant at the 0.01 level (2-tailed).

rank was significantly higher among first- and third-year students than among second- and fourth-year students.

As Table 3 shows, the vast majority of students (79.9%) had a moderate level of perceived stress; almost one-fifth (18.6%) had a low level of perceived stress, while only 1.5% had a high level of perceived stress.

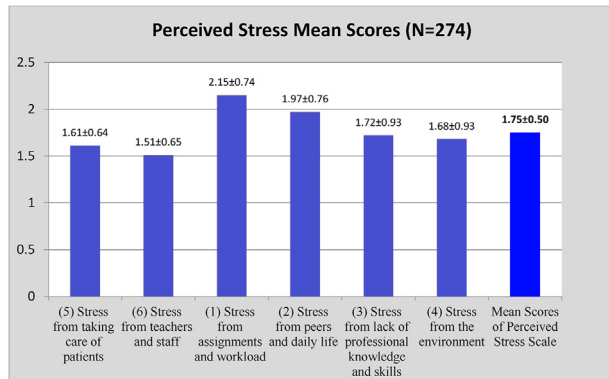
Figure 3 presents the participants' mean scores for the perceived stress subcategories. The overall mean PSS score for the total sample was 1.75 ± 0.5 , on a scale ranging from 0–4. In line with Sheu,¹⁶ perceived stress was divided into six subcategories, based on the nature of the questions. The highest mean score for any perceived stress subcategory was for stress caused by 'assignments and workload', followed by 'peers and daily life', 'lack of professional knowledge and skills', 'the environment', 'taking care of patients', and 'teachers and staff', in descending order. The participants' mean scores for these perceived stress subcategories were 2.15, 1.97, 1.72, 1.68, 1.61, and 1.51, respectively.

The test of normality was used to compare mean uncertainty scores by demographic factors; it revealed that demographics based on mean uncertainty scores did not follow a normal distribution. As Table 4 shows, there was no

Table 3: Students' perceived stress categories (N = 274).

	Low perceived stress		Moderate perceived stress		High perceived stress	
	Mean-score (0–1.33)		Mean-score (>1.33–2.66)		Mean-score (>2.66–4)	
Health-science students (274)	n	%	n	%	n	%
	51	18.6%	219	79.9%	4	1.5%

Abbreviation: N= Sample size, n = Frequency, % Percent.

**Figure 3: Participants' mean scores in perceived-stress sub-categories (N = 274).****Table 4: Comparing perceived-stress mean scores by socio-demographic factors (N = 274).**

Sociodemographic Factor	n	Mean Rank	Test	P. value
Nursing	146	135.89	Mann–Whitney	0.719
Paramedic	128	139.34	U = 9109	
Satisfied	161	135.83	Mann–Whitney	0.770
Dissatisfied	113	138.67	U = 8907	
Saudi	232	140.66	Mann–Whitney	0.121
Non-Saudi	42	120.06	U = 4139	
Male	87	133.78	Mann–Whitney	0.596
Female	187	139.23	U = 7811	
First year	71	129.10	Kruskal–Wallis Test	0.368
			Chi-Square = 3.157	
Second year	85	141.22		
Third year	56	128.86		
Fourth year	62	149.82		

Significant *p*. value at the 0.05 level (2-tailed).

statistically significant difference in the participants' mean perceived-stress scores, based on demographic characteristics. However, the paramedical students' mean perceived-stress scores were higher than those of the nursing students; likewise, students who were dissatisfied with their specialties had higher levels of perceived stress than those who were satisfied. Women and Saudi students received higher mean perceived-stress scores than men or non-Saudi students. Fourth-year students had the highest mean perceived-stress scores, followed (in descending order) by students in their second, first, and third years.

There was a negative and statistically insignificant correlation between the participants' emotional-intelligence scores and their mean perceived-stress scores, reflecting an insignificant inverse correlation between these variables. However, the *p* value approached significance ($p = 0.051$, Pearson correlation = -0.215), as the correlation coefficient test was significant at the 0.05 level (two-tailed *p* value).

A linear regression, carried out to model the relationship between the students' emotional-intelligence scores and mean perceived-stress scores, approached, but did not achieve, statistical significance ($F = 3.617$; $p = 0.051$; the regression coefficient was significant at the 0.05 level). As emotional-intelligence scores were a predictor of mean perceived-stress scores (the dependent variable), the linear-regression prediction equation was formulated as: $y = 2.153 - 0.008x$, where *y* is the student's mean perceived-stress score, *x* is his or her emotional-intelligence score, and 2.153 is a constant (Table 5). This equation predicts the mean perceived-stress scores of undergraduate students to a high degree, once their emotional-intelligence scores have been identified.

Discussion

As the findings show, almost all participants had average or high levels of emotional intelligence. These findings are

Table 5: Linear regression between emotional intelligence and perceived-stress mean scores.

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error			
				Beta	
(Constant)	2.153	0.213		10.092	<0.001**
Emotional Intelligence scores	-0.008	0.004	-0.115	-1.902	0.058

^a Dependent Variable: Mean Perceived Stress Scores.

congruent with a comparative study by Moawed,²⁰ who researched nursing students at King Saud University in KSA and at Tanta University. In that study, 80% of participants had high emotional intelligence, with slightly higher scores among the King Saud nursing students. An Indian study of 207 medical students at a medical college in Chennai found similar results: a mean emotional-intelligence score of 107.58 ± 16.44 (out of 160) for the entire sample, reflecting a generally high level of emotional intelligence.²¹ Another study carried out in a US university found that most nursing students had moderate emotional intelligence.²² By contrast, a study of 203 healthcare students in Australia found that the mean emotional intelligence level of all participants was lower than the normative mean.²³

In assessing differences in emotional intelligence, based on students' demographic characteristics, the present study found that nursing students had significantly higher emotional-intelligence scores than paramedical students. However, in a comparative study of paramedical and dental students, the paramedical students were more responsive to specific components of emotional intelligence than the dental students, although the difference was not significant.²⁴ In the present study, Saudi students were found to have higher emotional intelligence than non-Saudi students, although the difference was not significant. Other studies conducted in KSA have shown similarly high levels of emotional intelligence among Saudi nursing students.^{25,26}

The emotional-intelligence scores of men and women were almost the same; although the women's scores were slightly higher than the men's, there was no significant difference in emotional-intelligence levels, based on gender. These findings contradict the results of a study involving 471 medical undergraduate students at the University of Colombo in Sri Lanka, which concluded that female students had a significantly higher mean level of emotional intelligence than male students.¹² Likewise, an Indian study of medical students found that female students responded in a more emotionally intelligent way to emotional vignettes than male students.²¹

When categorised by academic year, emotional-intelligence scores in the present study were significantly higher among first- and third-year students than among second- and fourth-year students. A study of university nursing students in Modena, Italy²⁷ found a good level of emotional skill among students beginning their nursing training; this increased further by the final year of study, suggesting that emotional competencies can be learned. By contrast, other studies have investigated the relationship between emotional intelligence and academic performance by year. One such study investigated emotional intelligence and academic performance in 163 first- and final-year medical students at Universiti Putra in Malaysia, concluding that more emotionally-intelligent medical students performed better and achieved higher academic performance than other students in all academic years.²⁸

Perceived stress among students was associated with the following stressors, ranked in descending order from the highest to lowest level of stress: 'assignments and workload'; 'peers and daily life'; 'a lack of professional knowledge and skills'; 'the environment'; 'taking care of patients'; and 'teachers and staff'. According to these results, a key stressor

that affects students in health specialties is the large number of assignments, alongside the theoretical and clinical workload. These findings are congruent with the results of research on nursing students in KSA, which found that 'assignments and workload' were the main stressor in clinical training.²⁹ However, that study also found that the second-highest source of stress was 'teachers and nursing staff', which was ranked as the lowest source of stress in the present study. A further study of nursing students at a Saudi university found that the highest mean perceived-stress score was associated with 'peers and daily life', followed by 'assignments and workload stress'. The lowest score was associated with 'lack of professional knowledge and skills'.²⁶

The average perceived-stress score of students in the current study was 1.75 ± 0.5 on a scale of 0–4, reflecting a moderate level of stress. Similar results were reported by Ahmed and Mohammed,²⁶ who arrived at a mean perceived-stress score of 1.54 ± 0.45 , using the same scale. According to Hamaideh,²⁹ the total level of stress perceived by health-science students in KSA was 42.36 ± 19.37 on a scale ranging from 10 to 88. By contrast, an Australian study found that medical students' mean perceived stress levels were significantly higher than the normative mean, especially among pharmacy and dentistry students.²³

Although the current study found no significant difference in students' mean perceived-stress scores in relation to demographic characteristics, it did show higher mean scores for paramedic vs. nursing students, dissatisfied vs. satisfied students, women vs. men, and fourth-year students vs. students in other academic years. Students who were dissatisfied with their specialties had higher mean perceived-stress scores, possibly reflecting their feelings of unease and the academic challenges associated with studying an undesired specialty. Women are generally more eager to learn and achieve higher scores in Arab communities, potentially experiencing higher levels of perceived stress as a result. Fourth-year students face many requirements, exams, intensive clinical training, competencies, and graduation projects, all of which are likely to increase their levels of stress. In relation to student nationality, a study of 244 medical students at King Faisal University in KSA, found that the prevalence of stress among Saudi medical students was as high as 53%.³⁰ However, that study also concluded that gender had no impact on medical-student stress.

The present study found an insignificant negative correlation between the participants' emotional-intelligence scores and their mean perceived-stress scores, suggesting that the higher a student's emotional intelligence, the lower his or her perceived level of stress. Although the underlying mechanism that connects emotional intelligence with perceived stress has not been identified, researchers have argued that emotional intelligence may act as a 'stress buffer'. Hypothetically, when facing life stressors, emotionally intelligent people demonstrate a greater adaptive response than people with low emotional intelligence; this response may include reduced reactivity (less mood deterioration, less physiological stimulation), and faster healing once the stress is relieved. These findings confirm those of an Australian study, which found a significant negative correlation between emotional intelligence and perceived stress among students, especially those studying nursing and pharmacology.²³ Similarly, a study carried out in the United States concluded that higher

levels of emotional intelligence were significantly associated with lower levels of perceived stress among students.²

Conclusion

Average-to-high levels of emotional intelligence were detected among most health-science students, particularly nursing students and students in their first and third academic years. Emotional intelligence was not significantly influenced by nationality, gender, or specialty satisfaction. Health-science students overall had a moderate level of perceived stress. 'Assignments and workload' represented the greatest source of perceived stress for most students. Gender, nationality, specialty, specialty satisfaction, and academic year caused no significant difference in perceived stress among students. Finally, the present study detected a negative non-significant correlation between emotional intelligence and perceived stress.

Recommendations

Students in the health-science professions experience more stress than those in other courses. For this reason, it is essential to identify the psychological stressors that affect health-science students and to provide them with emotional-intelligence training, given the growing complexity of healthcare demands and patient expectations. Programs designed to enhance emotional intelligence can be added to course curricula to improve the emotional intelligence of health-science students. Strengthening emotional intelligence may increase success, lead to better academic achievement, and reduce student stress. Moreover, the concepts of 'emotional intelligence' and 'perceived stress' should be incorporated into health-science curricula to promote the development of emotional intelligence and to anticipate and overcome stressors. This will enable students to provide high-quality patient care in a range of clinical settings, in the context of stressful and dynamic clinical events.

The use of a cross-sectional design has limited the extent to which these results can be used and applied. Further descriptive longitudinal studies could generate more reliable findings. As convenience sampling may also limit the generalisability of results, a random sampling of students from different universities is recommended. In addition, future studies should use observational checklists or personal interviews, as self-reported studies carry the risk that respondents may answer in a manner they perceive to be socially acceptable.

Source of funding

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Conflict of interest

The author has no conflict of interest to declare.

Ethical approval

In relation to ethical issues, this scientific research conforms to the Helsinki Declaration; all participants completed forms to provide their informed consent. Official approval for the study was received from the Ethics Committee and Deanship of Al-Ghad Colleges for Applied Medical Sciences prior to the data-collection process with approval number (EA 2/11- 12/2019), dated (22/12/2019). All aspects of this scientific research were carried out in accordance with the Helsinki Declaration.¹⁹ The students gave their informed consent after reading the purpose, procedure, and description of the study. Participation in the survey was voluntary, anonymous, and confidential. The questionnaires were coded to ensure the participants' anonymity and treated as aggregates. The students were not expected to be harmed by their participation in the study. The final research report was sent to participants upon request.

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