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The Relationship of University Students' Academic Achievement with Emotional Intelligence and Self-esteem: A Descriptive Correlation Study Design at Jouf University, Saudi Arabia 2023

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Abstract

Background: Understanding the factors that influence academic achievement among university students is crucial for educational institutions. This study aims to clarify the possible relationship between students' academic achievement, emotional intelligence, and self-esteem. The findings from this research may provide valuable insights for educators and policymakers in developing strategies to enhance students' academic performance and well-being.

Methods: A descriptive-correlational study design was used. Participants were a total of 412 university students belonging to the selected 13 medical, scientific, and literary faculties of Jouf University, Saudi Arabia. The sample was determined randomly from different faculties. A multipart assessment tool was used to focus on assessing demographic information in terms of college, years of education, gender, parents' educational level, marital status, and birth order. Students' academic performance was based on their self-reported responses, as the grade point average is measured out of five. In contrast, emotional intelligence was measured using the Trait Emotional Intelligence Questionnaire-Short Form and the Rosenberg Self-Esteem Scale used to calculate students' self-esteem.

Results: The study found a strong positive correlation between grade point average, emotional intelligence, and self-esteem with parental educational level and academic year. Emotional intelligence and self-esteem were significantly influencing grade point average. Gender and academic year also had slight positive effects.

Conclusion: There is a significant positive correlation between academic achievement, emotional intelligence, and self-esteem. Variables like fathers, mothers, academic year, gender, and self-esteem positively impacted grade point average.

1. Introduction

The relationship between academic achievement (AA), emotional intelligence (EI), and self-esteem (SE) in university students has been a topic of interest and concern for many researchers. AA is a crucial aspect of university life, and failure to achieve academic success can have significant consequences for individuals and society as a whole. EI, defined as the ability to perceive, understand, and manage emotions in oneself and others, has been identified as a potential factor that can influence AA [1].

EI and coping techniques are two characteristics predicted to influence AA via these social and motivational pathways. The association between EI and academic ability was the main focus of study in this field [2]. EI refers to the capacity to understand, use, and regulate one's own emotions in order to alleviate stress, communicate effectively, sympathize with others, overcome barriers, and diffuse conflict [3]. Furthermore, EI has been defined as competency, which has been classified as personal competence (how we manage ourselves) and social competence (how we manage our relationships) [4]. EI is a concept that can be used in educational settings. One of the reasons for addressing EI is that it is considered to be a better predictor of social accomplishments than the traditional concept of intelligence quotient [5]. Individuals with a high EI have better interpersonal skills, quite stable long-term interrelations, and substantial problem-solving abilities. It is completely obvious that it is inappropriate to think about emotional skills without taking into account psychological aspects of the person, like SE.

One of the key components of academic success can be SE [6]. SE refers to feeling satisfied

with oneself and valuable [7]. However, SE refers to how people feel about themselves, particularly how much they like themselves, whether they are happy with their performance, and even more so how they feel about their social and educational status. It also relates to how well their realistic and ideal selves match up.

Several studies have suggested a positive correlation between EI and AA [8]. EI has been found to be associated with better social skills, more stable long-term relationships, and problem-solving abilities. Additionally, EI has been considered a better predictor for social achievements compared to traditional concepts such as intelligence quotient [9].

On the other hand, SE is another psychological construct that has been studied in relation to AA. SE refers to an individual's perception of their own worth and value. Some studies have found a positive relationship between SE and AA. Individuals with higher SE may be more motivated, confident in their abilities, and resilient when faced with challenges [10].

However, it is important to note that the findings regarding the relationship between EI/SE and AA are not consistent across all studies. Some studies have reported no significant relationship between EI/SE and AA [11]. Furthermore, gender differences have also been observed in some studies, with higher levels of SE reported among female students [6].

In an experiment done by Zheng et al., who studied the connection between academic success and SE, some students received the actual exam score, while others were given a score that was 10 times lower [12]. Results indicated a connection between academic success and SE. Studies conducted by Ramzi and Saed revealed a favorable and significant relationship between academic success and

SE [13]. The findings of some studies and research projects demonstrate the significance of EI and SE in explaining academic success [6]. Analyzing the link between EI and academic success is very complicated, studies in this area frequently refute one another. Previous studies show that EI is related to other variables in mental health, and that EI is significantly associated with higher levels of SE and positive mood among people [14]. The survey of 205 radiation therapists conducted by Ranjbar *et al.* [14] showed that males are more emotionally intelligent than females. However, some studies have shown that females appear to be more sensitive and warm in relationships than males, and compared to males, they are considered to be more emotionally intelligent. Jenaabadi and Stami *et al.* conducted a descriptive correlational study to investigate the association between EI, SE, and academic performance [11, 15]. The study included 2000 students from Iran's Payame Noor University. Findings revealed that students' EI and confidence did not affect their AA. The results also showed that the SE of female students was higher than that of male students.

The relationship between AA, EI, and SE in university students was explored through several research studies. Jenaabadi's study examined the correlation between EI, SE, and AA among Iranian university students [16]. Rahimi's study focused on the relationship between EI, SE, gender, and educational success using questionnaires 17]. Beyoğlu investigated the connection between EI, SE, and academic progress among bachelor of art students [18]. Chouikrat conducted a comparative study on African-American students in low-income schools to understand the link between SE and AA 19]. Egwurugwu *et al.* assessed the relationship between SE and EI in undergraduate medical students in Nigeria [20]. All of these

studies provide valuable insights into the complex relationship between AA, EI, and SE in university students. While some studies found a positive correlation between these factors, others did not find any significant relationship. It is crucial for educators, counselors, and teachers to consider these psychological constructs when supporting students' academic progress.

1.1. Research problem

AA is a concern for university professors, authorities, and parents. Understanding the relationship between EI and AA is essential to identify factors contributing to students' success or failure. Previous studies suggest that EI and SE are related to AA, but there are conflicting results. This research aims to provide comprehensive insights into the relationship between EI, SE, and AA among university students. The findings will inform educators and policymakers about interventions or programs to improve academic performance. The study focuses on Jouf University students, allowing for tailored interventions. Critical thinking involves developing cognitive and meta-cognitive skills for problem-solving, understanding meaning, and assessing credibility. Social and emotional adjustment has been linked to AA, with self-regulation, sustained efforts, time management, stress coping, and social navigation essential for success. SE is a key component of academic success, with studies showing a positive relationship. Academic language proficiency is a major factor contributing to students' AA and critical thinking abilities, as critical thinking skills are crucial for problem-solving. However, the link between EI, SE, and academic success remains complex. The influence of EI on academic success has received relatively little research [21]. The role of emotion and other noncognitive factors in academic success has been

masked by more than a century's worth of research on general intelligence and cognitive ability. This has prompted academics to concur that IQ and aptitude test results as well as high grade point average (GPA) are the best indicators of a student's success in college. Many students fall short of their true potential, despite having a high IQ or a history of academic success. So suggesting additional factors, especially noncognitive ones, are involved. Therefore, the aim of this study is to look at the role of EI and SE in students' academic success.

1.2. Research questions

This study was intended to answer the following research questions.

- What is the status of students' emotional intelligence?

- What is the status of students' self-esteem?

- What is the relationship between students' academic achievement, emotional intelligence and self-esteem?

1.3. Study aims

This study aim to contribute to the existing literature by examining the relationship between EI, SE, and AA among university students at Jouf University in Saudi Arabia in 2023. The significance of this study lies in its potential to provide insights into the factors that contribute to AA and may help in developing interventions to support students' academic success. By understanding the relationship between EI, SE, and AA, educators and policymakers can implement strategies to enhance students' EI and SE, ultimately leading to improved academic outcomes.

2. Materials and Methods

2.1. Study design

A descriptive–correlative study design was employed among students at Jouf University.

This study design was selected since it is a good way to learn about the relationships between different study parts.

2.2. Study period

The study was conducted during the academic year 2022–2023, from August 2022 to March 2023.

2.3. Setting

The sample of the study was obtained from 13 different colleges in the campuses of Jouf University in four major cities (Qurayyat, Tabarjal, Sakaka, and Domat Eljandal) in the Jouf region, Saudi Arabia.

2.4. Sampling and sample size

The target population consisted of male and female students studying at Jouf University, Saudi Arabia. The authors contacted students at the aforementioned 13 colleges. The study population needed to fulfill the following inclusion criteria: being over 18 years of age and enrolled in a bachelor's degree program. There were 24,137 B.Sc. students across the study area. The sample size for this study was determined by using the calculator.net program (https://www.calculator.net/sample-size-calculator.html), resulting in the inclusion of 379 participants in the study. This indicates that 379 students or more were required to ensure a

95% confidence level. A self-reported electronic questionnaire was distributed via an online link. The link was distributed as a message through university emails and blackboard. Furthermore, students were encouraged to share the link with their classmates for maximal participation. The link was kept open for a month to receive responses from the participants.

2.5. Tools

This study used a multipart assessment tools focused on assessing the following information regarding the participants.

2.6. Demographic information

The questionnaire included seven questions relating to the students' name of the college, years of education, gender, marital status, mother's educational level, father's educational level, and birth order.

2.7. Academic achievement (AA)

This element of the questionnaire was designed to measure students' academic performance based on their self-reported responses. As GPA is measured out of 5, the academic performance was Likert scale at the university in the following manner: (a) <2 = "fail" (GPA < 2); (b) 2–2.74 = "acceptable" ($2 \geq$ GPA $\leq$ 2.75); (c) 2.75–3.74 = "good" ($2.75 \geq$ GPA $\leq$ 3.74); (d) 3.75–4.49 = "very good" ($3.75 \geq$ GPA $\leq$ 4.49); and (e) >4.5 = "excellent" (GPA $\geq$ 4.5).

2.8. EI scale

The Trait Emotional Intelligence Questionnaire-Short Form (TEI Que – SF) is a five-item Likert scale range from strongly disagree to strongly agree to assess four EI traits. Developed by Stough *et al.* [22], the internal consistency of the scale ranges between 0.59 (emotionality), 0.74 (self-control), 0.71 (sociability), and 0.86 (well-being), with a value of 0.78 for Global Trait EI. A four-factor analytic solution with loadings ranging from 0.35 to 0.92 supports the validity of the scale. This accounted for 69% of the variation and correlations with broad personality characteristics [22]. The Cronbach's alpha was 89% for reliability of the data in the current sample for Global Trait EI and 64.5% for component reliabilities of well-being, self-control, emotionality, and sociability. The ratability of this scale in previous research was a = 0.76, along with its four factors: well-being (a = 0.84); self-control skills (a = 0.82); emotional skills (a = 0.85); social skills (a = 0.81) [23].

2.9. Self-esteem (SE) scale

The participants' SE was calculated by using the Rosenberg Self-Esteem Scale (RSES) [24], a widely used self-reported scale that assesses participants' global SE by measuring both positive and negative feelings about the self. The RSES consists of 10 items scored on a four-point Likert scale (ranging from 1 = strongly agree to 4 = strongly disagree). The scale has five negative items that were reversed before the total score was calculated. The overall score ranges from 0 to 40, with 40 being the highest. Higher overall scores indicate greater SE. This questionnaire has already been used in Saudi Arabia to collect the data. Therefore, their validity and reliability is confirmed. The overall reliability test was 0.86 Cronbach Alpha (86%), suggesting good internal consistency [25]. Thus, the questionnaires were valid to be used in this study.

2.9.1. The conceptual framework

Critical thinking involves the development and application of cognitive and meta-cognitive skills for problem-solving, understanding meaning, identifying relationships, assessing credibility, presenting reasoning coherently, and self-consciously monitoring cognitive actions. The hypothesis linking social and emotional adjustment to AA has gained attention from economics, social and emotional learning, and quality psychology [26]. Self-regulation, sustained efforts, time management, coping with stress, and social navigation are essential for academic success. One of the key components of academic success can be SE [6]. Studies revealed a favorable and significant relationship between academic success and other variables, but still analyzing the link between EI, SE, and academic success is very complicated as studies in this area frequently refute one another [7, 26].

2.10. Data analysis methods

Data were analyzed via IBMS SPSS Statistics 26.0 (IBM, Chicago, IL, US). A percentage frequency distribution was used to describe the demographic characteristics of the students. A multiple linear regression model was used to assess the relationship between the study variables.

2.11. Ethical considerations

After obtaining ethical approval from the university's Local Committee of Bioethics (approval no. 2-4-42), an online self-reported questionnaire was disseminated to the participants by using Google Forms. The questionnaire contained information regarding the purpose and advantages of the research, in addition to a letter guaranteeing the confidentiality and privacy of the participants' data. The cover letter explicitly stated that the participants' involvement would be voluntary, and that without any direct or indirect consequences, students have the freedom to withdraw from the study at any time without providing any explanation. The participants were assured that the information derived from the questionnaires was used explicitly for this study. The cover letter also included the researchers' contact details to encourage students to ask questions specific to the research. The completion and submission of the questionnaire responses indicated the students' agreement regarding participation in the study

3. Results

Table 1 revealed that 46.6% of the subjects studied at the medical and health colleges, 28.6% were in the fourth academic year, 64.6% were female, and 82.3% were single. Also, it showed that mothers of 41.1% of the students had a university education, and while the fathers of 33.7% had a university education. Related birth order reported that 55.3% were in the middle and 41.5% of students' GPA was very good.

Figure **2** shows that 48.5% of studied subjects had moderate emotional intelligence, 19.9% had high emotional intelligence, and 31.6% had low emotional intelligence.

Figure **3** revealed that 46.1% of studied subjects had moderate self-esteem, 27.4% had high self-esteem, and 26.5% had low self-esteem.

Table 2 shows that the high significant model detected through the F test value was 11.463 with a P-value of 0.000. This model explains 67% of the variation in GPA detected through R^2 value 0.67. Also, this table showed that fathers' education,

Figure 1

TABLE 1: Distribution of participants according to demographic data (*n* = 412).

Items	N	%
College		
Science college	148	35.9
Medical and Health colleges	192	46.6
Social Science college	72	17.5
Academic year		
First year	41	9.9
Second year	80	19.4
Third year	62	15.1
Fourth year	118	28.6
Fifth year	62	15.1
Sixth year	49	11.9
Gender		
Male	146	35.4
Female	266	64.6
Marital status		
Married	69	16.75
Single	339	82.3
Divorced	4	0.97
Mothers' education level		
Illiterate	41	9.9
Primary/secondary school	120	29.1
High school	82	19.9
University	169	41.1
Fathers' education level		
Illiterate	29	7.1
Primary/secondary school	119	28.9
High school	125	30.3
University	139	33.7
Birth order		
Elder	113	27.4
In the middle	228	55.3
Younger	71	17.3
Students GPA		
Excellent	61	14.8%
Very good	171	41.5%
Good	128	31.1%
Acceptable	43	10.7%
Fail	9	1.9%

mothers' education, academic year, EI, and self-esteem had a highly significant positive effect on GPA at *P*-value < 0.01**.

Table 3 stated that the highly significant model detected through the F test value was 10.955 with

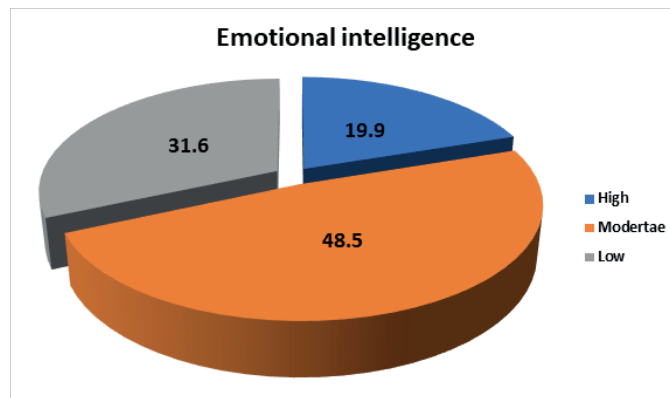**Figure 2**: Percentage distribution of participants according to their EI (*n* = 412).
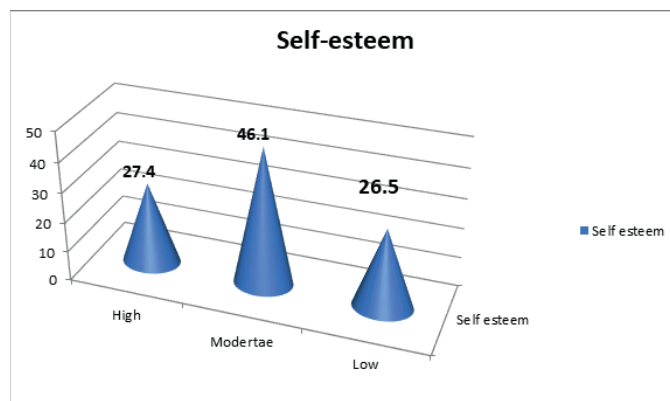

Figure 3: Percentage distribution of participants according to their self-esteem (*n* = 412).

TABLE 2: Multiple linear regression model for GPA.

	Unstandardized coefficients	Standardized coefficients		
	B	Beta	T	*P*-value
Fathers' education	0.145	0.095	2.610	0.029*
Mother' education	0.139	0.089	2.417	0.031*
Graduation year	0.078	0.065	2.105	0.046*
Emotional intelligence	0.297	0.164	6.135	0.000**
Self-esteem	0.299	0.174	4.997	0.000**
ANOVA				
Model	R^2	F		*P*-value
Regression	0.67	11.463		0.000**

Dependent variable: GPA
Predictors (constant): fathers' education, mother' education, graduation year, emotional intelligence, and self-esteem

a *P*-value of 0.000. This model explained 58% of the variation in self-esteem detected through R^2 value of 0.58. Also, it showed that gender "male," academic year, and GPA score had a slight frequency positive effect on self-esteem at *P*-value < 0.05*. In contrast, emotional intelligence had a significant positive effect on self-esteem at *P*-value < 0.01**.

Table 4 reveals a highly significant positive correlation between GPA, emotional intelligence,

TABLE 3: Multiple linear regression model for self-esteem.

	Unstandardized coefficients	Standardized coefficients		
	B	B	T	P-value
Gender "male"	0.101	0.085	1.196	0.035*
Academic year	0.199	0.241	2.101	0.031*
GPA score	0.201	0.273	1.870	0.040*
Emotional intelligence	0.399	0.246	5.107	0.001**
Model	R^2	F	P. value	
Regression	0.58	10.955	0.000**	

Dependent variable: self-esteem
Predictors (constant): gender "male", academic year, GPA score, and emotional intelligence

TABLE 4: Correlation between studied variables.

		GPA	Emotional intelligence	Self-esteem
GPA	r. p		0.413 0.008**	0.502 0.006**
Emotional intelligence	r. p	0.413 0.008**		0.388 0.009**
Self-esteem	r. p	0.502 0.006**	0.388 0.009**	

and self-esteem among university student at P-value < 0.01**.

4. Discussion

AA is a multidimensional variable that is influenced by a variety of circumstances. It is challenging to study the relationship between EI, SE, and AA, and studies in this area sometimes show conflicting results. This study investigated the relationship between university students' AA, EI, and SE. It also aimed to assess the demographic characteristics of participants concerning their EI, SE, and AA. The results revealed a highly significant positive correlation between university students' GPA, EI, and SE ($P < 0.01$); it was found that the higher the EI, the higher the SE and AA. This may be because EI relates to interpersonal success; it can improve recognition performance, memory capacity, and personal learning. Additionally, people with high SE have higher expectations of achievement and are ambitious about achieving success.

This study's findings were supported by the findings of Bibi and Saqlain and that of Giofrè [27, 28] who evaluated the relationship between EI, SE, and academic progress. These studies concluded that there was a valid and positive relationship between EI, SE, and AA.

Additionally, few studies [12, 28, 29] confirmed a positive relationship between SE and AA among students which is consistent with our finding. Moreover, this study's findings regarding EI agree with those of Cazan and Năstasă's [30], which aimed to determine whether EI was linked to student success in terms of adaptation and AA? Their findings revealed a positive relationship between EI, adaptability, and academic accomplishment among university students in Romania with higher EI showing improved adaptability and higher academic accomplishment. According to their findings, students' dropout rates increased due to their dissatisfaction with the university.

Similarly, other studies conducted in Saudi Arabia concluded that a high level of EI positively affects students' AA [31].

Additionally, the results of this study are consistent with a study conducted in North America, which reported a positive relationship between SE and AA among students [32]. Conversely, a study conducted by Rahimi on the association between EI, SE, gender, and academic success among Iranian students yielded unexpected results [17]. Their study found no correlation between AA, SE, and EI among university students. Furthermore, several studies found no significant relationship between EI and AA. Consequently, they sought to determine the factors affecting the relationship between educational activity, EI growth, contextual variables, and students' AA [33, 34].

Regarding the second research question, it was found that the variables of father's education level, mother's education level, academic year, EI, and SE had a significant positive effect on GPA at $P < 0.01^{**}$. Additionally, the variables of gender "male," academic year, and GPA score had a slight frequency positive effect on SE at $P < 0.05$. As EI had a significantly positive effect on SE at $P < 0.01$, this could explain how contextual factors influence EI and how it can be acquired and learned.

This study's findings are inconsistent with the findings of Jenaabadi's, who evaluated the relationship between EI and SE with respect to AA [11]. Their study showed no vital difference between male and female students regarding EI, while our findings revealed that gender "male" had a slight frequency positive effect on SE. It is more common to see male students with more SE than female students as a result of different expectations and attitudes of societies and cultures. These expectations and attitudes are regarding the abilities of males and females in terms of EI. Currently, the active participation of females in cultural and environmental domains encourages them to use environmental and cultural facilities

on an equal footing with men, reducing gender disparities [35].

Additionally, Bibi & Saqlain found a positive association between SE and EI among Pakistani university students, with female students being more emotionally intelligent than their male counterparts; however, no statistically significant gender difference was found regarding SE [27].

Moreover, this study's findings were consistent with those of Salavera and coworkers' and other researchers who found no significant gender differences in SE [23]. Furthermore, Tajeddini conducted a comparative study with a group of 400 university students (200 females and 200 males). The study found no gender differences regarding EI or SE [36]. Additionally, Hasanvand and Khaledian conducted a study on EI and SE among Indian and international university students [37]. However, no difference was observed regarding EI between male and female students.

5. Limitations

However, there are some limitations to this research. Participants' responses were subjective, and all data in the questionnaire was self-reported, resulting in inaccurate and reliable data for the sample's participants. Other variables, such as family and university environments, can be included in future studies regarding EI and SE.

6. Conclusion

The findings of this study revealed that approximately half of the participants had average scores regarding EI and SE; additionally, they showed a highly significant positive correlation between AA (measured in terms of GPA), EI, and SE. This indicates that if students' SE is higher, their

EI is higher, and vice versa, showing improved EI, SE, and AA. Additionally, the variables of father's education level, mother's education level, academic year, "male" gender, EI, and SE all had significant positive effects on GPA.

7. Recommendations

This study can prove to be beneficial in the following ways:

- According to this study, AA is related to EI and SE among university students. These findings can be utilized in future research.

- This study's results can prove to be beneficial for academic advisors, consulting psychologists, students, and university chiefs of staff for student affairs.

- Interventions can be implemented to boost students' SE as this study has shown that boosting students' SE will have a beneficial impact on their EI and AA.

- Students may benefit from this study's findings that indicate that high EI leads to better SE. Individuals can face their challenges on their own by behaving in a more emotionally mature way, consequently enhancing their AA.

Declarations

Acknowledgments

Ethical Considerations

The study was approved by Jouf University Local Committee of Bioethics (Approval no. 2-4-42).

Competing Interests

None declared.

Availability of Data and Material

All data and material are available upon reasonable request to the corresponding author.

Funding

Abbreviations and Symbols

AA: Academic achievement

EI: Emotional intelligence

SE: Self-esteem

IQ: Intelligence quotient

GPA: Grade point average

BSc: Bachelor of Sciences

RSES: Rosenberg Self-Esteem Scale

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