# Relationships of academic expectation stress & self-efficacy, efficacy for self-regulated learning with academic performance during Covid pandemic

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ORIGINAL STUDY

# Levels and Relationships of Academic Expectation Stress & Self-Efficacy, Efficacy for Self-Regulated Learning With Academic Performance During Covid Pandemic

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## Abstract

*Background*: **Academic expectation stress & self-efficacy and efficacy for self-regulated learning may affect academic performance. The Covid pandemic has affected the physical and psychological well-being of all, including students. However, there is a paucity of studies examining these variables in college students in Saudi Arabia.**

*Objectives*: **This study was conducted to explore the levels and relationships of academic expectation stress & self-efficacy, self-regulated learning, and its relationships with academic performance in college students of Shaqra University during the Covid pandemic.**

*Material and methods*: **A total of 302 students were recruited in this cross-sectional study. They were assessed with sociodemographic and academic proforma designed for this study, the Academic expectation stress inventory (ASE), the Academic self−efficacy scale (AES), and the efficacy of the self-regulated learning scale (SRL).**

*Results*: **Results revealed that the mean score of AES, SRL, and ASE was 29.18, 35.38, and 41.11, respectively. On linear regression analysis exam score was statistically significant positively predicted by the score on SRL, and the Score of AES was statistically significantly predicted by the score of SRL (+ve) and the score of ASE (-ve).**

*Conclusions*: **It may be concluded that efficacy for self-regulated learning may mediate academic performance and academic self-efficacy during the Covid pandemic. Enhancing self-regulated learning may improve academic performance during the pandemic.**

*Keywords:* Academic self-efficacy, Self-regulated learning, Academic expectation, Academic performance, Academic stress, Academic efficiency

## 1. Introduction

Academic performance is essential in determining whether or not a university degree should be awarded. The Grade Point Average (GPA) is a crucial indicator of a student's academic performance. A cumulative GPA (CGPA) is a numerical weighted average of a student's grades throughout his studies that can be used to determine a student's overall academic performance and standing. To graduate with the required CGPA, students must possess specific academic skills. They often face stress for unreasonable expectations of performance. Therefore, it is crucial to identify the academic and learning skills and associated stress of the students of a particular institution, as any deficiencies or failures discovered could be corrected or enhanced through instruction and support.

Academic stress affects a large percentage of Saudi students for various reasons [1,2]. Academic expectancies stress is mental suffering caused by

one's and others' academic expectations [3] and is a growing area of research. Family, teachers, friends, and significant others remain the primary sources [4]. Academic-related stress is prevalent in college students in Saudi Arabia, causing them to struggle academically [5] and leading to maladaptive coping [1]. Fear of failure and high family expectations are commonly reported [6]. According to a study from other countries, academic expectation stress is linked to academic achievement [7]. However, hardly any report addresses the relationship between academic expectation stress and academic performance among Saudis.

Self-efficacy is the belief in one's ability to plan and carry out the steps necessary to achieve specific goals [8], and it has been linked to academic success [9]. Researchers have identified academic-specific self-efficacy, termed academic self-efficacy [10]. Academic self-efficacy is a person's belief in their ability to complete a task or achieve a specific academic objective at a certain level [11]. The review finds its modest relationship with academic performance [12] and gender differences in particular academic domains [13]. It appears to correlate with academic success among Saudi students [14]. These investigations, however, were conducted in the setting of a specific academic course cohort; therefore, extrapolating the findings to other streams will require more research. Furthermore, indirect evidence reveals a link between academic self-efficacy and stress [14], and Saudi students have reported a high-stress level [5]. In Western countries, academic self-efficacy appears linked to students' ability to cope with stress [15].

The process by which students plan, monitor, and regulate their learning is known as self-regulated learning. It refers to planning and adjusting ideas, feelings, and actions to promote motivation and learning [16]. Tutoring abilities, students' self-efficacy [17], family, peers, educational environment [18], and gender are all elements that influence it [19]. It's also linked to coping strategies and academic achievement [20].

Self-efficacy for self-regulated learning is the belief in one's ability to use a variety of self-regulated tactics to achieve academic success [21]. It has been connected to learning confidence and has indirectly impacted academic performance among Asians [22]. However, few studies are examining this variable among Saudis. Alotaibi et al. reported self-regulated learning to mediate academic performance [23].

The covid pandemic affected regular academic routine and overall psychological well-being. It may be assumed that it may also impact self-learning, self-efficacy, and academic-related stress. Considering the preceding literature, this study aimed to determine the levels and relationships of academic expectation stress, self-efficacy, and self-regulated learning with academic performance during the Covid pandemic.

## 2. Material and methods

This cross-sectional study was done among undergraduate students at different colleges of Shaqra University in Saudi Arabia, using the snowball sampling method; after receiving approval from the Institutional Ethical Committee. The estimated sample size for this research was 194 participants. The sample size was determined using the correlation sample size formula $[(Z_\alpha + Z_\beta)/C]^2 + 3$; ($Z_\alpha$ = The standard normal deviate for $\alpha$; $Z_\beta$ = The standard normal deviate for $\beta$; $C = 0.5 * \ln [(1 + r)/(1-r)]$ [24]; assuming $\alpha = 0.05$, $\beta = 0.20$ and $r = 0.20$. A Google form link was sent to a WhatsApp group of university students to collect information. The form included no identifying information and had an opt-out option. After giving consent, participants could respond to assessment tools, including demographic and academic information, a self-rating Academic Self−Efficacy scale, and an Academic expectation stress inventory.

The study spanned from March 3 through May 8, 2021. Any gender and membership at Shaqra University colleges were research eligibility requirements. Any chronic mental disease was an exclusion criterion. A 302 responses met the study's requirements and were included. Assessment tools included- Demographic and academic proforma: Demographic and academic proformas comprised age, domicile, affiliated college and course, the number of years studying the course, preceding semester exam score, perceived teaching comprehension, perceived course suitability, and suitable family environment for study. Prior semester GPA (1−5) was calculated by dividing course credit hours by course points.

The scale of academic self-efficacy: This self−report scale measures academic self-efficacy. The measure has eight questions with seven-point Likert answers (1 = Very Untrue to 7 = Very True). Scale scores range from 8 to 57. Higher scores imply more academic self-efficacy. Cronbach's alpha was .86 and had good validity [25]. This instrument has been utilized with college students, and its validity in the Saudi population has been demonstrated [26].

The Efficacy for Self-Regulated Learning Scale: This measure assesses college students' self-regulated

learning abilities and has been used in college students. The scale has 11 items and 5-point responses (1–5), with scores ranging from 11 to 55. A higher score indicates more self-efficacy for self-regulated learning. The scale has Cronbach's coefficient to be 0.87 [27]. This scale has been used among Saudis [28].

Academic expectation stress inventory: This self-report assesses college students' expectations as an academic stressor. The measure is a Likert scale comprising nine items with 1–5 answers. The range is 9–45. A higher score suggests more stress. The Cronbach alpha value was 0.87 [3]. This tool is used in Arabic translation [29].

The statistical analysis used SPSS vs. 22. Descriptive statistics assessed students' demographic and academic characteristics. Mann–Whitney U test examined demographic and academic characteristics' relationships with AES, ASE, and SRL scores. A linear regression utilized age and AES, ASE, and SRL scores to predict exam scores. In addition, a linear regression study determined whether the ASE and SRL scores might predict the AES score. The significance of the test was p = .05.

## 3. Results

The demographic and academic features consisted of the majority being female, belonging to non-health science courses, having a good perceived understanding of teaching, course suitability, and family environment. The mean value of age was 21 years, while for exam score (GPA) was 4.04. The mean score on AES, SLR, and ASE, were 29.18, 35.38, and 41.11, respectively (Table 1).

Mann–Whitney U test showed a statistically significant group difference in the measure of academic self-efficacy with a perceived understanding of teaching; the score of self-regulated learning with a college-type perceived understanding of teaching, and perceived course suitability. In addition, a statistically significant group difference was also observed on the score of academic expectation stress with college type, organized study, perceived understanding of teaching, and perceived course suitability (Table 2).

Linear regression analysis (Adjusted R Square = .045; df = 4; F = 4.534; p = .001) exam Score was statistically significantly predicted by the score on efficacy for self-regulated learning (beta = .158, t = 1.98, P = .048) (Table 3).

Similarly, a linear regression analysis (Adjusted R Square = .016; df = 2; F = 3.420; p = .034) Score of academic expectation stress was statistically significant negatively predicted by score of SRL

Table 1. A: Sample characteristics.

| Variables | | Value |
|---|---|---|
| | | n (%) |
| Gender | Male | 147 (48.7%) |
| | Female | 155 (51.3%) |
| Subject | Health Science | 96 (31.8%) |
| | Non-Health science | 206 (68.2%) |
| Organized study | No | 236 (78.1%) |
| | Yes | 66 (21.9%) |
| Perceived understanding of teaching | Yes | 171 (56.6%) |
| | No | 131 (43.4%) |
| Perceived course suitability | Yes | 263 (87.1%) |
| | No | 39 (12.9%) |
| Good Family environment | Yes | 275 (91.1%) |
| | No | 27 (8.9%) |
| | | Mean (SD) |
| Age | | 21.48 (2.54) |
| Exam score | | 4.04 (0.72) |
| AES Score | | 29.18 (8.71) |
| SRL Score | | 35.38 (9.70) |
| ASE Score | | 41.11 (8.00) |

(beta = .188, t = 2.35, P = .019) and score of ASE (beta = −.197, t = −2.46, P = .014) (Table 4).

## 4. Discussion

The academic characteristics observed in this study were similar to the previous report. In this study, the smaller number of students enrolling in health science indicates the limited number of colleges and seats available for health science students, as well as a likely lack of understanding about specialty and prerequisites among students [30]. We observed a smaller number of students to have habits of organized study. This may be partly because the study was conducted during the non-examination period. The examination is the most important driving factor of analysis in Saudi Arabia. It may be expected that students' regularity would be confined before the tests rather than throughout the year [31]. The university's use of various student-friendly teaching approaches for teaching and learning [32] may have reflected as a significant proportion of students understood the teaching. The home atmosphere in Saudi Arabia is studying friendly for students, as observed in this study. It may have been influenced by government encouragement for education and greater knowledge about the importance of education [33].

This study revealed a comparable level of academic expectation stress to those of Asians during non-pandemic [34] but lower than other reports [35–37]. In general, a large proportion of Saudi students experience severe academic stress, which has been liked to psychological difficulties such as anxiety and depression [38] and is associated with inefficient

*Table 2. Relationships of demographic and academic variables with AES, SRL, and ASE Score.*

| Variables | | N | Mean Rank | MWU | Z | p |
|---|---|---|---|---|---|---|
| AES Score*Gender | Male | 147 | 147.58 | 10816.00 | −.76 | .447 |
| | Female | 155 | 155.22 | | | |
| AES Score* College type | Health Science | 96 | 146.95 | 9451.00 | −.61 | .536 |
| | Non-Health science | 206 | 153.62 | | | |
| AES score* Organized study | No | 236 | 147.48 | 6839.50 | −1.51 | .130 |
| | Yes | 66 | 165.87 | | | |
| AES score* Perceived understanding of teaching | Yes | 171 | 166.26 | 8676.00 | −3.35 | .001 |
| | No | 131 | 132.23 | | | |
| AES score* Perceived course suitability | Yes | 263 | 148.76 | 4408.50 | −1.41 | .157 |
| | No | 39 | 169.96 | | | |
| AES Score* Good Family environment | Yes | 275 | 153.45 | 3175.00 | −1.24 | .214 |
| | No | 27 | 131.59 | | | |
| SRL Score* Gender | Male | 147 | 145.60 | 10524.50 | −1.14 | .252 |
| | Female | 155 | 157.10 | | | |
| SRL Score*College type | Health Science | 96 | 130.23 | 7846.50 | −2.89 | .004 |
| | Non-Health science | 206 | 161.41 | | | |
| SRL score* Organized study | No | 236 | 154.93 | 6978.50 | −1.29 | .197 |
| | Yes | 66 | 139.23 | | | |
| SRL Score* Perceived understanding of teaching | Yes | 171 | 135.14 | 8402.50 | −3.72 | .001 |
| | No | 131 | 172.86 | | | |
| SRL Score* Perceived course suitability | Yes | 263 | 157.77 | 3480.00 | −3.24 | .001 |
| | No | 39 | 109.23 | | | |
| SRL Score* Good Family environment | Yes | 275 | 151.64 | 3675.00 | −.08 | .931 |
| | No | 27 | 150.11 | | | |
| ASE Score* Gender | Male | 147 | 141.83 | 9971.50 | −1.87 | .061 |
| | Female | 155 | 160.67 | | | |
| ASE Score* College type | Health Science | 96 | 127.02 | 7537.50 | −3.33 | .001 |
| | Non-Health science | 206 | 162.91 | | | |
| ASE Score* Organized study | No | 236 | 157.89 | 6280.00 | −2.40 | .016 |
| | Yes | 66 | 128.65 | | | |
| ASE Score* Perceived understanding of teaching | Yes | 171 | 128.69 | 7299.50 | −5.19 | .001 |
| | No | 131 | 181.28 | | | |
| ASE Score* Perceived course suitability | Yes | 263 | 157.81 | 3468.50 | −3.26 | .001 |
| | No | 39 | 108.94 | | | |
| ASE Score* Good Family environment | Yes | 275 | 152.42 | 3459.00 | −.58 | .558 |
| | No | 27 | 142.11 | | | |

coping such as self-medication [1,2]. The participation of students from diverse streams (including different professional courses) may have contributed to this study's heightened academic stress level.

Self-regulated learning appears to be shaped by various factors [39] and is linked to academic success [40] and is likely to be affected during pandemics [41,42]. Findings revealed that non-health science background students had better self-regulated learning but experienced higher academic expectation stress. These differences may have been caused by course-related characteristics, student self-efficacy, and tutoring skills [7,17]. The findings indicate a positive relationship between self-regulated learning and academic performance, as is with a previous report [43]. During the pandemic, lecturers create an instructional design with specific directions and instructions and share it with students via interactive

*Table 3. Relationships of exam score with Academic expectation stress with Academic efficacy and self-regulated learning.*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 3.902 | .420 | | 9.29 | .001 |
| | Age | −.031 | .016 | −.109 | −1.90 | .057 |
| | AES Score | .003 | .005 | .033 | .58 | .562 |
| | SRL Score | .012 | .006 | .158 | 1.98 | .048 |
| | ASE Score | .008 | .007 | .083 | 1.04 | .297 |

a. Dependent Variable: Exam score; Model summary: Adjusted $R^2$ = .045; df = 4; F = 4.534; p = 001.

*Table 4. Relationships of Academic expectation stress with Academic efficacy and self-regulated learning.*

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 32.01 | 2.60 | | 12.28 | .001 |
| | SRL Score | .169 | .072 | .188 | 2.35 | .019 |
| | ASE Score | −.214 | .087 | −.197 | −2.46 | .014 |

a. Dependent Variable: AES Score; Model summary; Adjusted R Square = .016; df = 2; F = 3.420; p = .034.

course management. This preparation focuses on ensuring students understand the learning objective by monitoring their progress through selective learning strategies [44].

In this study, self-regulated learning is positively linked to the score of academic expectation stress. It is similar to the observation made by Zheng et al. during the pandemic [45] but is contrary to the prior findings [46]. The possibility could be that academic expectation stress was not significant enough to affect self-regulated learning or vice versa. This study found a greater level of academic self-efficacy than the previous report [14]. This finding is consistent with the observation made by Ulfatun et al. during this pandemic [47]. It may also be related to changes in university policy toward academic reforms emphasizing student-based teaching and learning. Talsma et al. did not observe any difference in academic self-efficacy [48]. This is in contrast to the observation by Alemany-Arrebola et al., who observed that pandemic has an impact on academic self-efficacy [49–51], particularly when anxiety symptoms prevail [49], and those with Perfectionistic concerns [52].

As seen in this study, the level of academic self-efficacy can vary depending on the course a student is pursuing [13]. Non-medical students frequently exhibit higher academic self-efficacy, predicting their performance and outcome [53]. Better self-efficacy may overcome the disadvantage of unorganized study habits, and individuals with perceived course appropriateness may have chosen their course based on their ideal self-efficacy. Academic self-efficacy did not predict academic achievement, which is in line with the prior study's findings [54]. However, during the pandemic, self-efficacy appears to predict academic achievement [48].

On the other hand, academic self-efficacy was shown to be moderately linked with academic achievement in a review; however, causality could not be determined [12]. Academic self-efficacy predicts academic expectation stress negatively and is consistent with a previous report [55]. Therefore, academic self-efficacy is likely to defend against the adversity of stress, and increasing such efficacy is recommended to address academic stress [55].

## 5. Conclusion

It is possible to deduce from the findings of this study that degrees of efficacy for self-regulated learning may impact academic performance and academic self-efficacy in college students during the pandemic. This conclusion requires more research to be confirmed. Limitations of the study were no control group, respondent's personality style/traits were not assessed, exclusion of mental disorder was by self-report, the study was online that used snowball sampling, and was unable to determine the response rate; thus, the study's findings should be interpreted cautiously.

Future research should be multicentric, having more sample size. In addition, there is a need to examine the factors that contribute to the development of self-efficacy, efficacy for self-regulated learning, and measure to address the stress of academic expectation stress in the competitive environment.

## Author contribution

Muath A Alammar: Concepts; Design; Definition of intellectual content; Literature search; Data acquisition; Data analysis; Manuscript preparation; Manuscript editing; Manuscript editing; Manuscript review; Guarantor. Dushad Ram: Concepts; Design; Definition of intellectual content; Literature search; Data acquisition; Data analysis; Manuscript preparation; Manuscript editing; Manuscript editing; Manuscript review; Guarantor. Hamad Ali Alwarthan: Design; Definition of intellectual content; Literature search; Data acquisition; Data analysis; Manuscript preparation; Manuscript editing; Manuscript editing; Manuscript review; Guarantor. Foaud Ayidh Almutairi: Design; Definition of intellectual content; Literature search; Data acquisition; Data analysis; Manuscript preparation; Manuscript editing; Manuscript editing; Manuscript review; Guarantor. Abdullah Mohammad Alobaidi: Design; Definition of intellectual content; Literature search; Data acquisition; Data analysis; Manuscript preparation; Manuscript editing; Manuscript editing; Manuscript review; Guarantor.

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