

Original Article

Perceived Stress and Academic Achievement among King Saud bin Abdulaziz University for Health Sciences' Students in Al-Ahsa Governorate

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Abstract:

**Background:** Stress is a non-specific response of the body to any threat. Students usually face a academic stress which has a negative impact on their motivation and academic performance. Academic achievement and performance is critical for both theoretical and practical domains, particularly some specialties such as health sciences. Today's healthy students who are in good psychological and social health can then develop and promote healthy lifestyles for their patients. **Aim:** To investigate the relationship between perceived stress and academic achievement among King Saud bin Abdulaziz University for Health Sciences' Students in Al Ahsa Governorate. **Research design:** A descriptive correlational research design. **Settings:** The study was conducted in King Saud bin Abdulaziz University for Health Sciences, College of Applied Health Sciences. **Subjects:** College of Applied Health Sciences' students, all available students; levels 4, 5, and 6. **Tools:** Tool I: Sociodemographic, clinical and academic profile data questionnaire. Tool II: Perceived Stress Scale (PSS) **Results:** More than three quarters of the studied subjects had a moderate level of stress which is associated with GPA ranged from 3.5 to 5 with no significant relationship with their academic achievement. Being single, having good health, enough income, practicing sports and receiving social support were the main factors that affecting the students' level of perceived stress. **Conclusion:** studied subject had a moderate level with no significant relation to their academic achievement. **Recommendations:** Encourage the students to engage in extracurricular activities, fostering a supportive and lively college community is important for reinforcing students' well-being.

**Keywords:** Stress, GPA and Students

**Introduction:**

Stress is a psychological problem that affects individuals' general condition according to its perceived level. Everyone experiences psychological stress in numerous facets of their lives, starting with their family, neighborhoods, places of employment, and educational institutions.<sup>(1)</sup>

Stress is a non-specific response of the body to any threat. It has two aspects either positive or negative. Positive stress can be described as good, and it called eustress which motivate individuals to complete tasks, starting a new job, taking a vacation and learning a new hobby.<sup>(2,3)</sup> On the other side, negative stress is one form of stress that can have harmful effects on one's physical and mental health. It is mainly happened when stressors limit the individuals' abilities to face their life stressors. When tasks and requirements or situations are being mandatory on individuals, the body tries to adjust to new demands to help individuals regaining their normal life.<sup>(4,5)</sup>

Stress is a disease of mental pressure that happens when individuals suffer from physical or mental issues. When an incident is deemed stressful, our bodies go through a series of physiological responses. The Hypothalamic Pituitary adrenal (HPA) and sympathetic-adrenal-medullary (SAM) pathways are the two axes of the neuroendocrine system that govern the physiological stress response and its regulation. Arousal is brought on by changes in blood pressure, heart rate, perspiration, and pupil dilation that are brought on by catecholamine. They can also alter immunological function and have an impact on a number of bodily tissues.<sup>(6,7,8)</sup> Additionally, cellular immunity functions significantly worse under stress. These alterations are linked to an increased vulnerability to infectious illnesses, including HIV infections, upper respiratory tract infections, and herpes reactivations. In relation to the mental consequences of stress; anxiety, despair, and mood changes are frequently happened.<sup>(9)</sup> Stress usually happened at any age but it was reported that adolescents and young adults are facing many stressors than the other age group.<sup>(10)</sup>

Adolescence is a serious period of life which includes hormonal, physical and psycho-social changes. Adolescents may face stress because of financial issues, interpersonal relationships or academic life.<sup>(11)</sup> The impact of stress on adolescents depends on the amount and type of stress they experience. According to the majority of researches studied the effects of stress on teenage health and psychological well-being, teenagers have a wide range of physical complaints that could be classified as psychosomatic symptoms (e.g., headaches, stomach-aches, indigestion, circulatory problems, and nausea). Stressful situations associated with school, such as interpersonal issues with peers and teachers, pressure to perform well in school, and fear of failing, are among the most significant factors that heighten somatic symptoms throughout this developmental stage.<sup>(12)</sup> Specifically, Pascoe et al. (2020)<sup>(13)</sup> studied the impact of stress on students in secondary school and higher education and reported that an academic stress can have a negative impact on motivation, academic performance, and the likelihood of dropping out of school of the students.

Students seek in their lives to achieve certain goals that they try to reach to realize themselves. These near or far goals, some of which the student may achieve without the others, causing the student to experience

a kind of stress and dissatisfaction as he/she failed to achieve his/her goals, and as a result, the student finds it exhausting to try to obtain his, her unattainable goals.

The gap between having goals and facing difficulties for achieving it may enhance the development of students' feeling of sadness, depression and hopelessness.<sup>(14)</sup> In addition, being students who should fulfill all the educational requirements and responsibilities increase the students' sense of stress. As a result of the student's feeling of stress in the university, her/his absences increase without justification, she/he will be late for attendance, a feeling of aimlessness increases, and her/his academic level is affected respectively which may affect the students' academic achievement. While considering the stress among students the traditional view is that the college students endure more pressure and serious physical and mental health problems when compared with other student groups like school students.<sup>(15)</sup>

Academic achievement is a phenomenon that has drawn the interest of many educators, and educational psychologists in particular, due to its significance in the lives of students, teachers and parents. It is a reflection of their children's development and academic advancement. Academic success helps the students feel good about themselves. Also, it is the most important criterion for a student's transition from one class to another, or from one level of education to another, as well as what areas students and their families aspire to and how this reflects on their social and economic status. Individual differences play an important role in academic achievement of students; such differences as demographic status, intelligence and behavioral characteristics of students. Stress may affect these students' characteristics and their academic achievement.<sup>(4,16)</sup> According to a study done by (Alosaimi et al, 2015)<sup>(17)</sup>, inhabitants of Saudi Arabia are at an equivalent or somewhat higher risk of experiencing stress. These stressors include pressures from the workplace, academic, and homesickness. Understanding the impact of stress on college academic achievement and performance is critical for both theoretical and practical domains, particularly in highly academic demanding specialties such as health sciences.<sup>(18)</sup>

**Significance of the study:**

Studying the effect of stress on students' academic achievement and their performance is highly important particularly in health sciences colleges. Students studying health sciences will deal with patients in the future, their psychological well-being will be crucial in managing their patients' illnesses. It is more likely that today's healthy students who are in good psychological and social health can then develop and promote healthy lifestyles for their patients.<sup>(19)</sup> In addition, due to the lack of research on the relationship between students' perceived stress and academic achievement in Saudi Arabia, this research will play a major role in clarifying this relationship.

**Aim of the study:**

To investigate the relationship between perceived stress and academic achievement among King Saud bin Abdulaziz University for Health Sciences' Students in Al Ahsa Governorate

**Research Question:**

What is the relationship between perceived stress and academic achievement among King Saud bin Abdulaziz University for Health Sciences' Students?

## II. Materials and Methods

### Research design:

A descriptive correlational research design was applied in this study

### Setting:

The study was conducted in King Saud bin Abdulaziz University for Health Sciences in Al Ahsa region, College of Applied Health Sciences. It is a governmental university specializing in health sciences. It was first established in 2005 and was located in the Saudi Arabia capital "Riyadh". Now there are three regions (Riyadh, Jeddah and Al Ahsa). It includes both undergraduate and postgraduate programs.

### Subjects:

College of Applied Health Sciences' students, students in the second year for levels 4, 5, and 6 were included in the study.

### Inclusion Criteria:

- i. Female and male students in the College of Applied Health Sciences at King Saud bin Abdulaziz University for health sciences, the pre-professional years. Those level students had both genders and same courses before dividing them to their colleges.
- ii. Accept to participate in the study.

### Exclusion Criteria:

- i. Students on psychological treatment
- ii. Students don't have previous university education because it will consider as a factor in the study.

### Sampling size:

College of Applied Health Sciences' students who met the study criteria were included in the study. Their total number at the time of data collection was 400 students. Sample size of 350 students who fulfilling the inclusion criteria were included in the study. According to Raosoft sample size calculation program using of 95% confidence level and 5% margin of error with 400 population size; the suggested sample size was 197 but the study was done on 350 students.

### Sampling Technique:

Convenient sample technique was used

### Study Tools:

#### Two tools were used for data collection

#### Tool I. Sociodemographic, clinical and Academic Profile data questionnaire

It was developed by the researchers based on related literatures. It has data related to:

- Sociodemographic data such as (Age, Sex, income, .....
- Previous medical history (Presence of chronic disease,..)
- Favorite hobbies (Reading books, drawing..),
- Social support from (family, friends..)

### **Tool II: Perceived Stress Scale (PSS)**

It was developed by Cohen et al. (1983)<sup>(20)</sup> it has a 14-items instrument developed to measure the degree to which situations in a person's life are appraised as stressful. This scale was modified into a shorter version of 10 items. The values of reliability and validity for the study was ( $\alpha = .78$ ) by Cohen (1988)<sup>(21)</sup> to allow the assessment of perceived stress without any loss of psychometric quality. The responses are rated on a five-point Likert scale ranging from (0) indicating "never" to (4) indicating "very often". Questions 4, 5, 7, and 8 are negatively stated and reversely scored. The total score of PSS ranged from 0-40.

Scores of 0-13 indicates low stress,

Scores of 14-26 indicates moderate stress.

Scores of 27-40 indicates high perceived stress.

The scale was translated into Arabic language by Abo Kadom (2012)<sup>(22)</sup> and tested for its validity and reliability (Cronbach's alpha= .89)

### **Methods**

- An official approval to carry out the research study was obtained from CON-A (College of Nursing- Al Ahsa) dean, Ministry of National Guard Health Affairs, UPP for male and female sections, and KAIMRC (King Abdullah International Medical Research Center)
- Tool I was developed by the researchers based on review of literature. The Arabic version of Tool II was used in this study.
- A pilot study was carried out on 18 students who were not included in the study sample to assess the applicability, clarity and feasibility of the study tools. No modifications were needed.
- The purpose of the study was explained in details for the students either male or female.
- Distribution of the questionnaire was done during the time available in the courses' schedule.
- The time elapsed to fill the questionnaire ranged from 15-20 minutes. The researchers made sure that there are no missed or incomplete items.
- Data was collected from mid-December 2023 to the mid-January 2024.

### **Ethical Considerations:**

- Written informed consent was obtained from the students after complete explanation of the study purpose
- Right to refuse participation in the research was maintained
- Data confidentiality was assured.
- Students' privacy and anonymity were maintained and respected.

### **Data analysis:**

The collected data were organized, tabulated and statistically analyzed using SPSS software statistical computer package version 20.

Descriptive statistics measures, which including number, percentages, and averages, measures of dispersion and central tendency (Minimum, Maximum, Arithmetic mean ( $\bar{x}$ ), Standard deviation (SD). For measures

of association Chi-square test (X<sup>2</sup>). The level of significance selected for this study was p value equal to or less than (P < 0.05).

**Results:**

It consists of four parts:

Part I Socio-demographic characteristics & Health profile of studied subjects

Part II Academic Profile of the studied subjects

Part III Perceived level of stress among studied subjects

Part IV Relation between perceived stress level and socio-demographic characteristics and academic achievement of studied subjects

Table I shows the Socio-demographic characteristics of the studied subjects. It was observed that the age of the studied subjects is ranged from 18 to 22 years with the mean age 20.34±1.13. Nearly one third of the studied subjects (32.3%) aged 19 years. Equal percent (26.6%) of the studied subjects aged either 18 or 20 years old. As for sex; both genders were equally distributed (50%).

Regarding marital status; the majority of the studied subjects were single (92 %), while the rest (8 %) were either married (7.4 %), or divorced / separated (0.6%)

In relation to the students' monthly income, the majority of the studied subjects (82.6%) reported that their income was enough for their needs and only (17.4%) reported that they have inadequate income.

Concerning the number of students' family members. Nearly half of the studied subjects (46.3%) had more than 7 family members followed by (42%) of students had from 5 to 7 family members and (11.7 %) had 2 to 4 family members.

It can be shown from table I that the most popular hobby practiced by more than one third of studied subjects (38.9%) was sports followed by reading (33.4%) and drawing (12.6%).

As for studied subjects' social support, more than half of the studied subjects (66.3%) reported that their families were the source of support for them, while receiving support from friends reported by (22.6%). Only 2.3% of studied subjects had no support.

**Table (1): Distribution of the studied academic emeritus according to their socio-demographic characteristics N= (90):**

Socio-demographic characteristics	The studied subjects	
	No (350)	%
Age (in years)		
▪ 18-	93	26.6
▪ 19-	113	32.3
▪ 20-	93	26.6
▪ 21-	32	9.1
▪ 22	19	5.4
Mean ± SD	20.34±1.13	
Gender		
▪ Male	175	50

▪ Female	175	50
<b>Marital status</b>		
▪ Single	322	92
▪ Married	26	7.4
▪ Divorced/separated	2	0.6
<b>Number of family members</b>		
▪ 2 – 4	41	11.7
▪ 5 – 7	147	42
▪ More than 7	162	46.3
<b>Income</b>		
▪ Enough	289	82.6
▪ Not enough	61	17.4
<b>Type of hobbies</b>		
▪ Reading	117	33.4
▪ Plants	24	6.9
▪ Sports	136	38.9
▪ Drawing	44	12.6
▪ Gaming	11	3.1
▪ Others	18	5.1
<b>Social support person</b>		
▪ Family	232	66.3
▪ Friends	79	22.5
▪ Wife/husband	22	6.3
▪ Others	9	2.6
▪ None	8	2.3

Table II shows the studied subjects' academic profile. In relation to students' academic level, nearly half of the studied subjects (45.7), (45.4%) were in level 5 and 4 respectively. Only (8.9 %) of the subjects were in level 6. According to the studied subjects' GPA, it was noted that more than half of them (59.1%) had GPA of 3.5 to 4.4, followed by (28.3 %) had the GPA 2.5 to 3.4 and (10.6%) had GPA 4.5 - 5. Only (2%) of them had GPA less than 2.5

**Table II. Distribution of studied subjects according to their academic profile characteristics**

Students' Academic Profile	The studied subjects	
	No (350)	%
<b>Academic Level</b>		
▪ 4	159	45.4
▪ 5	160	45.7
▪ 6	31	8.9
<b>Current GPA</b>		
▪ Less than 2.5	7	2
▪ 2.5 – 3.4	99	28.3

▪ 3.5 – 4.4	207	59.1
▪ 4.5 – 5	37	10.6

Table III shows the health profile of the studied subjects. In relation to their perception toward health. It was found that most of the studied subjects (64.3%) perceive their health as very good. While more than one quarter (28.6%) of them perceive their health as good. Perception of health as fairly good or not good reported by 5.7% and 1.4% of studied subjects respectively.

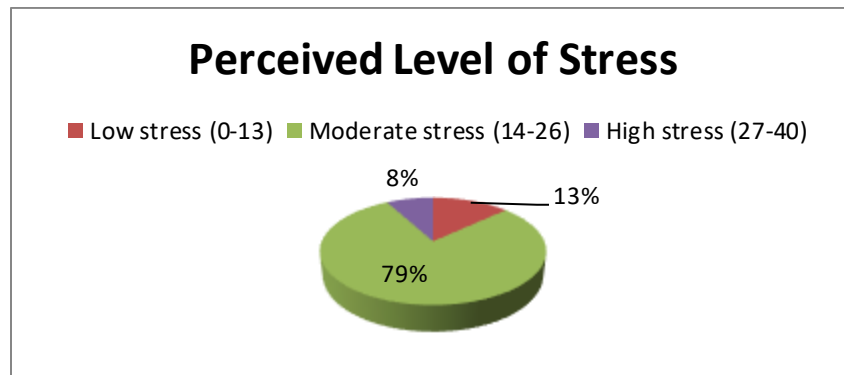
As regard the presence of chronic diseases, it was noted that the majority of studied subjects (85.4%) did not suffer from any chronic diseases. The rest (4.6) suffer from either anemia, DM, bronchial asthma or hypertension.

**Table III. Distribution of studied subjects according to their health profile**

Health Profile	The studied subjects	
	No (350)	%
<b>Perception of general health</b>		
▪ Very good	225	64.3
▪ Good	100	28.6
▪ Fairly good	20	5.7
▪ Not good	5	1.4
<b>Presence of chronic diseases</b>		
▪ Yes	51	14.6
▪ No	299	85.4
<b>Type of chronic disease</b>		
	<b>No (51)</b>	<b>%</b>
▪ Anemia	23	6.6
▪ Bronchial asthma	5	1.4
▪ Colon problem	3	0.9
▪ DM	12	3.4
▪ Hypertension	5	1.4
▪ Others	3	0.9

**Figure I** shows the distribution of the studied subjects according to their perceived level of stress. It was observed that more than three quarters of the studied subjects (79 %) had a moderate level of stress, followed by (13 %) of them had a low level of stress and only (8.0 %) had a high level of stress.





**Figure ( I): Distribution of the studied academic students according to their level of (PSS)**

Table IV shows the relationship between the studied subjects’ academic profile and their perceived level of stress. Despite that there is no significant relationship between studied subjects’ perceived stress level and their academic profile it was noted that more than two thirds of the studied subjects who had a moderate level of perceived stress had a GPA of 3.5 to 5.

**Table IV. Distribution of studied subjects according to their academic profile**

Students’ Academic Profile	Low		Moderate		High		Test of significance
	No.	%	No.	%	No.	%	
	46	13.1	276	78.9	28	8.0	
<b>Academic Level</b>							
▪ 4	25	54.3	123	44.6	11	39.3	Chi-square: 3.073 P: 0.554
▪ 5	19	41.3	126	45.7	15	53.6	
▪ 6	2	4.3	27	9.8	2	7.1	
<b>Current GPA</b>							
▪ Less than 2.5	1	2.2	6	2.2	0	0	Chi-square: 3.355 P: 0.765
▪ 2.5 – 3.4	10	21.7	82	29.7	7	25	
▪ 3.5 – 4.4	28	60.9	160	58	19	67.9	
▪ 4.5 – 5	7	15.2	28	10.1	2	7.1	

As regard for the relationship between perceived stress level and socio-demographic characteristics of the studied subjects. There is no significant relationship between studied subjects’ perceived stress level and their socio-demographic characteristics.

### Discussion

There are many psychological and social aspects that individuals in general and students in particular, suffer from, on top of which is stress. Academic stress may affect the students’ achievement as it may motivate or regret the students in achieving their goals.<sup>(17)</sup> The current study aimed to investigate the

relationship between level of perceived stress and the students' academic achievement at King Saud bin Abdulaziz University for Health Sciences in Al-Ahsa Governorate. The analysis sheds light on the different factors contributing to stress and their effect on the students' academic achievement

The results of the current study revealed that more than three quarters of the studied subjects had a moderate level of perceived stress which is expected for students studying in colleges related to medical fields as they had difficult courses and practical workload rather than theoretical colleges. This result is aligned with a study done in Helwan University, Egypt by (Ebrahim, et al 2024)<sup>(23)</sup> who reported that the majority of medical students experienced moderate to high levels of stress emphasizing the role of academic and teaching issues. Also, more than two thirds of the current studied subjects had GPA ranged from 3.5 – 5 with no statistically significant relationship with their perceived level of stress. This may be due to the awareness of the students with their course specification, course requirements and the date of quizzes and exams in the beginning of the semester which help students to set their plans and organize their tasks and subsequently decrease their level of perceived stress and increasing their GPA. This result is not consistent with the previous study results as it reported that the students at Helwan University had a lower academic percentage with a mean of  $76.1 \pm 9.7$  for their academic achievements. However, the current study findings diverge in that we did not observe a significant negative correlation between stress levels and academic performance. This discrepancy suggests there may be contextual differences in how academic environments influence the relationship between stress and performance, indicating that various institutional and cultural factors could play a role.

One of the main results of this study is that the majority of the studied subjects were perceiving their health either very good or good with a significant relationship with their perceived level of stress  $P= 0.046$ ; this means that their perceived level of stress did not affect negatively on their health but it acts as a motivator for them to accomplish their achievements. In other words; the studied subjects can cope in an effective way with their academic stressors without any negative effect on their health and it can be confirmed as the majority of the studied subjects reported that they did not have any chronic diseases. This paradox mirrors the findings of Alotaibi et al. (2020)<sup>(24)</sup>, who determined a comparable courting between health perception and stress level among clinical students.

Furthermore, the significant role of family in providing emotional support was evident in our study, as nearly two thirds of the studied subjects reported that they received social support mainly from their families followed by their friends which help in strengthening their coping abilities despite the absence of a significant relationship. These results reinforcing Youssef's (2016)<sup>(25)</sup> conclusion on the critical importance of a supportive family environment in alleviating stress among students which highlights the need for fostering family involvement.

This study found that engagement in sports was linked to moderate stress levels, suggesting that physical activity can serve as a buffer against stress. This aligns with the findings of David et al. (2017)<sup>(27)</sup>,

who also identified a protective role of physical activity in stress management. This highlights the need for students' involvement and encouraging extracurricular activities as part of stress management strategies.

Regarding the socio-demographic factors and its relation to the studied subjects' perceived level of stress; there is no significant relation was found but some factors may affect in our study identifies several factors that drastically have an impact on perceived stress amongst college students despite the lack of significant relationships an indirect way to the studied subject perceived level of stress as it was revealed in the study that more than three quarters of the studied subjects reported that they had enough income as the college provides monthly salary and free educational materials for their students. This may release the financial burden of the students and their families regarding their study. The results were consistent with a study done by (Seedhom et al 2019)<sup>(27)</sup> in Egypt which revealed that medical students did not face financial stressors. Also, more than three quarters of the studied subjects was single which may provide them with more time to focus on their courses and let them responsible for studying well with no other responsibilities which may positively impact their academic achievements.

Regarding circle of relatives' dynamics, our observed aligns with previous studies displaying that large family sizes and delivery order inside the own family make a contribution to better strain stages amongst students. This highlights the role of familial obligations and aid in pressure modulation. Our findings are constant with the ones of (Gazzaz et al. (2018)<sup>(28)</sup>, who additionally referred to the impact of family dynamics on stress tiers among scientific college students.

In overall, this takes a look at identifies good sized socio-demographic, educational, and health-associated factors influencing perceived stress levels amongst students. College students who are single, having good health, enough income, practicing sports and receiving social support suggested better stress and good GPA.

### **Conclusion**

Based on the study findings, it can be concluded that studied subjects experienced varying levels of stress and more than three quarters of them had a moderate level. Despite there is no a significant relationship between the perceived level of stress and the students' academic achievement; it was noted that moderate level of perceived stress is associated with GPA ranged from 3.5 to 5. Also, findings highlight the importance of holistic health management techniques to cope with stress. Addressing the multifaceted nature of stress amongst college students requires a comprehensive technique. Our findings endorse that engagement in sports activities and pursuits, along with strong own family assist, considerably mitigate pressure tiers.

### **Recommendations**

- Encourage the students to engage in extracurricular activities which may enhance their abilities to tolerate stress and cope with it.

- Fostering a supportive and lively campus community is important for reinforcing students' well-being. Future research needs to explore interventions that target the precise stressors recognized on this have a look at. Longitudinal research can offer insights into the effectiveness of those interventions through the years. Additionally, analysing cultural and institutional factors that may influence stress experiences will further enhance our understanding and inform targeted support strategies.

### **Limitations of the study**

Some challenges were encountered by the researchers during the data collection phase; for example, each level is divided into subgroups for lab practice and other activities and so having the data from all students' level was difficult.

### **ACKNOWLEDGEMENTS**

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### **CONFLICTS OF INTEREST**

There is no conflict of interest to disclose.

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