

Students' Academic Stress, Stress Response and Academic Burnout: Mediating Role of Self-Efficacy

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ABSTRACT

Academic burnout has many consequences and can have adverse effects on the educational system of the country. The purpose of this study was to investigate the relationship between the students' academic stress, stress response and academic burnout with the mediating role of self-efficacy. To this end, a total of 361 students (177 females and 184 males) was selected through multi-stage cluster sampling method and responded to Maslach Academic Burnout Questionnaire, Sherer General Self-Efficacy Questionnaire and Gadzella Student-Life Stress Inventory. The proposed model was evaluated through the structural model algorithm, using Imus Software. Mediating relationships were tested in the proposed model using the bootstrap method. Findings showed that the proposed model was well fitted with the data. Academic stress and stress response had a positive and significant effect on the academic burnout. The findings also showed that self-efficacy had a negative and significant effect on academic burnout. The results of indirect relationships showed that academic stress and stress response had a significant indirect effect on the academic burnout via self-efficacy. Overall, the results indicated that self-efficacy had a mediating role in the relationship between the academic stress, stress response and academic burnout.

Keywords: Academic burnout, academic stress, self-efficacy, stress response

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INTRODUCTION

One of the implications for educational and academic environments that have been taken into consideration by psychologists and educators in recent decades is the concept of academic burnout, which is a feeling of inadequacy and mental fatigue that students face with chronic stress due to the lack of resources to do assigned tasks and assigning

tasks (Gadzella & Baloglu, 2001). Studies show that university students are also at risk of academic burnout (Cecil et al., 2014; Fares et al., 2016; Rudman & Gustavsson, 2012). In recent years, research has shown that students' academic burnout has increased (Moneta, 2011). Students' academic burnout is one of the important issues of higher education research for various reasons. The first reason is that academic burnout can be the key to understanding the students' different behaviors. The second reason is that academic burnout affects the students' commitment to the college and their degree of participation in scientific affairs. Third, academic burnout can affect students' enthusiasm for continuing their education (Neumann et al., 1990).

Burnout is a state of emotional exhaustion that results from chronic stress syndrome, such as expensive role, pressure and time constraints, and the lack of required resources for fulfilling the tasks (Demerouti et al., 2001; Iacovides et al., 2003; Maslach et al., 2001; Toppinen-Tanner et al., 2005). Academic burnout in students is indicated by the study's longevity, pessimistic attitudes toward study, and feelings of incompetence as a student (Zhang et al., 2007).

Therefore, academic burnout is a multidimensional construct consisting of emotional exhaustion, pessimism, and the lack of efficiency. These dimensions are not separate processes of each other, and there are internal and dynamic relationships between them (Schaufeli et al., 2002).

Basically, burnout is a tension-related disorder and can be the result of exposure to chronic stresses for a long time and without recovery. This leads to problems such as emotional exhaustion, irritability, physical symptoms such as stomach contractions, headaches and cognitive problems such as memory and concentration problems (Asberg et al., 2010). Therefore, academic stress is one of those variables that are related to academic burnout. Since students make up the critical stratum of the society, entering the university creates a major change in their individual and social life. College students face a new environment and new social relationships and being in such an environment and confronting new expectations and roles are often accompanied with stress and stress.

Academic stress refers to the increasing need for knowledge and simultaneously the individual's perception of not having enough time to achieve that knowledge. Studies show the abundance of stress, anxiety and depression among the students. University students experience a variety of tensions; finding new friends, confronting new responsibilities, and adapting to new situations and heavy workloads. Students are constantly subject to the differences between the academic and social demands (Pluut et al., 2015) which can cause mental illness such as academic burnout and the loss of educational performance. In addition to the stress and stressors, stress response is also associated with burnout. Mogg et al. (1990) focuses on five stress factors (failures, conflicts, pressures, changes and self-imposed stress) and four-way reactions

to these factors (physiological, behavioral, cognitive and emotional). Stress response refers to a physiological or emotional arousal which results from the perception of tension or demand (Thoits, 1995). Lazarus (2006) emphasized the role of individual differences in how to differentiate in response to stressful experiences. The human brain's cerebral cortex examines and interprets the same situation differently and creates different responses. Human beings can modulate and regulate their emotions and conquer them in confronting the various situations they encounter (Gross, 2007).

In other words, according to Lazarus (2006), the main source of variability in the reaction to the stressful experiences and how these experiences affect the activation of individuals in different dimensions depends on the individual's subjective assessment of the importance of what has happened. The activation of the body is important in the face of a stressful event and protects the individual against risks through the preparation of the reaction. However, when the body tension system is often activated for excessive periods, it leads to mental health problems associated with stress such as emotional exhaustion (Asberg et al., 2010). Misra and Castillo (2004) described the role of stress in the formation of students' experiences as highly important along with six variables of age, gender, motivation to continue education, general self-esteem and the concept of self-education.

In this regard, a number of researchers interested in the field of studying stressful learning experiences emphasized the

role of supportive effects of some of the psychological qualities, such as self-efficacy in differentiating the individuals' vulnerability model in the face of stressful events. If students experiencing stressful educational experiences lack psychological supportive effects, they will have a more intense reaction and less ability to moderate long-term stressful experiences and thus show signs of burnout (Misra & Castillo, 2004). Therefore, one of the other factors affecting the academic burnout is self-efficacy. Self-efficacy is an important and effective concept in Bandura's cognitive-social theory which has a special position in the educational system.

Self-efficacy refers to perceived capabilities for learning or performing behaviors at designated levels (Bandura, 1997). Highly self-efficacious students have less academic burnout than those who have lower self-efficacy. In the study of Iranian-Turkish teachers and students, it was found out that burnout was associated with self-efficacy. Also, the ineffective beliefs of the individual towards oneself place the person at greater risk of psychological well-being problems such as emotional exhaustion or academic burnout because they get more vulnerable (Khezerlou, 2017). What is clear in terms of self-efficacy is the two-way relationship between the personal knowledge and the ability to cope with and use the personal knowledge in the face of difficulties (Kalat, 2016). Basically, self-efficacious people have specific plans for their lives, and have the ability to apply appropriate strategies in dealing with

issues and living conditions. From this perspective, the mutual relationship between the environment as the cause of events, the circumstances and events, and the internal system of the individual as an analyst of the situation and the application of the abilities and motives in different fields can be considered into account.

Research has shown that people with low self-efficacy are disturbed by evaluations. These people are skeptical of their abilities and skills and predict failure before they try to solve problems. These negative beliefs increase the stress and decrease the effective use of meta-cognitive strategies and ultimately result in academic burnout (Coutinho & Neuman, 2008). Accordingly, the present study intends to study the role of self-efficacy in the relationship between the academic stressors and the response model to academic stressors and the students' academic burnout in line with some empirical evidence. To this end, the relationships between the variables of academic stress, stress response and academic burnout considering self-efficacy as a mediator variable has been developed in the form of Model No. 1. In this model,

the educational stress and stress response were considered as the antecedents of academic burnout. Following that, self-efficacy affects the academic burnout. Therefore, in this template, we choose self-efficacy as a mediator. Some differences in students such as expectations, judgments about the capabilities in achieving specific functions affect various aspects of life (Nes & Segerstrom, 2006). Hence, we also intend to study the effect of this mediator on the stressful learning experiences and the response to these experiences. Earlier it was noted that a number of researchers have examined the concept of self-efficacy in the educational context. The results of Krypel and Henderson-King (2010) showed that the relationship between high self-efficacy and the perceived stress at university was negative and meaningful.

Therefore, the purpose of this research was to test the fitness of the proposed model (Figure 1) and to answer the question whether self-efficacy mediates the relationship between academic stressors and the response to these stressors with academic burnout among students?

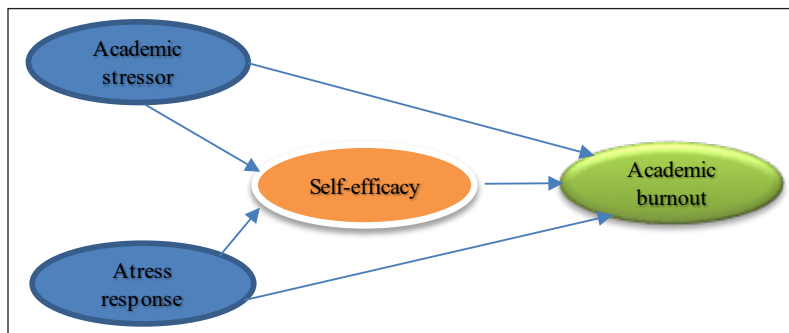


Figure 1. The proposed model for the relationship between academic stress, stress response, academic burnout with the mediator of self-efficacy

METHOD

The method of this research is correlation design through structural equation modeling (SEM), which is a multivariate correlation method. Structural equation modeling is in fact a general linear pattern extension (GLM) that enables the researcher to simultaneously test a set of regression equations.

Sample and Sampling Method

The statistical population of this study included all the undergraduate students of Yasouj University in the academic year of 2015-2016. Students were selected in several stages using multiple college sampling units, educational groups, field of study, class and class list using multistage cluster sampling method. To this end, four colleges were randomly selected from 6 faculties of Yasouj University. Then, two educational groups were selected from among the educational groups of selected faculties. After referring to the selected educational groups, two classes were randomly selected from different classes, and 361 students were randomly selected from the student list. From the original sample, 380 questionnaires were collected. 19 out of 380 questionnaires were set aside due to the incomplete responses. Finally, 361 questionnaires were selected to examine the appropriateness of the proposed model.

Maslach Academic Burnout Questionnaire

A questionnaire developed by Maslach et al. (2001) was used in order to measure

the academic burnout. This questionnaire consists of 15 items that include emotional exhaustion subscales (items 1, 4, 7, 10 and 13), pessimism (unwillingness) (items 2, 5, 11 and 14) and academic inefficacy (items 3, 6, 8, 9, 12 and 15). Individuals report their opinion about each subject on a seven-degree Likert scale from 1 (never) to 7 (always). An example of each subscale's item is: emotional exhaustion (I feel that I have got empty because of my study activities), lack of interest (I am skeptical of the importance of my lessons), academic inactivity (I'm sure I can work effectively in class activities). It should be kept in mind that the positive statements related to the self-efficacy subscale should be scored inversely. Simancas-Pallares et al. (2017) used coefficient to test the reliability of this tool which equaled 0.81. Furthermore, Cronbach's alpha was equal to 0.88 for emotional exhaustion; 0.80 for pessimism and 0.82 for educational inefficacy. Cano-Garcia et al. (2005) used a confirmatory factor analysis to assess the validity of the academic burnout subscales. The obtained fitness indexes were (CFI = 0.947; RMSEA = 0.06; TLI = 0.934; $df = 85$; $X^2 = 1.776$). The confirmatory factor analysis suggests adequate fitness of the model with the data in research (Simancas-Pallares et al., 2017).

Sherer's General Self-Efficacy Inventory

In order to measure the self-efficacy, a questionnaire developed by Sherer et al. (1982) was used. This questionnaire consists of 17 items, including subscales

of behavioral initiation tendencies (items 1, 4, 14 and 15), willingness to complete the behavior (items 3, 5, 8, 9 and 13) and insistence on doing assignments in the face of failure (items 2, 6, 7, 10, 11, 12, 16 and 17). The individuals report their opinion on each subject on a five-point Likert scale from 1 (I totally disagree) to 5 (I fully agree). An example of the items of each sub-scale is: the tendency to initiate a behavior (when I plan, I'm sure I can do it), willingness to complete the behavior (if I cannot do a task for the first time, I will try to continue to do that), insistence on doing assignments in the face of failure (I avoid dealing with problems. It should be noted that items 2, 4, 5, 7, 11, 12, 14, 16 should be scored inversely.

The developers of the self-efficacy questionnaire, Sherer et al. (1982) used factor analysis and internal consistency to determine the validity of this questionnaire. The results of factor analysis confirmed the presence of three factors in the questionnaire which totally explained 72% of the total variance. To determine the reliability, Cronbach's alpha coefficients for the whole questionnaire were reported to be 0.86, which indicated the desirable reliability of this questionnaire (Sherer et al., 1982).

Student-Life Stress Inventory (SLSI)

Student-Life Stress Inventory (SLSI) by Gadzella (1994) is based on Morris's theoretical model of the academic stressors and responses to them among the students in the academic contexts. This scale has 51 items to which students respond on

a five-point Likert scale from 1 "never" to 5 "always". This scale includes five dimensions of failures (for example, I have experienced the failures in reaching the goals I set out), conflicts (for example, selecting my goals has positive and negative aspects), pressures (For example, I have experienced the pressures as a result of competition for grades, work, relationships with my spouse or friends), changes (for example, I have experienced a change that disturbs my life or my goals) and self-imposed stress (For example, as a person I like to compete and win).

Items 1, 2, 3, 4, 5, 6, 7 belong to failures, items 8, 9, 10 belong to conflicts, items 11, 12, 13 and 14 belong to pressures, items 15, 16 and 17 are subject to changes, and items 18, 19, 20, 21, 22, 23 and 24 belong to self-imposed stress. Stress responses section includes four dimensions of physical responses (for example, I have experienced stammering in stressful situations), emotional (for example, I have experienced worry, fear and anxiety in stressful situations) (behavioral) (for example, I have experienced mistreatment with others in stressful situations (verbally or physically)) and cognitive (for example, I have experienced difficulty in thinking and analyzing stressful situations). Items 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37 belong to the physical responses. Items 38, 39, 40, 41 belong to emotional responses and items 42, 43, 44, 45, 46, 47, 48 and 49 belong to behavioral responses. Items 50 and 51 belong to cognitive responses.

Misra and Castillo (2004) assessed the reliability of the academic stress scale by Cronbach’s alpha, and their coefficients for their failures, conflicts, pressures, changes, and self-imposed stress were 0.65, 0.63, 0.71, 0.75 and 0.63, respectively. In the stress response section, Cronbach’s alpha for four types of reactions to psychological stressors including physiological, emotional, behavioral, and cognitive stressors was 0.87, 0.81, 0.68, and 0.85, respectively. Then, to investigate the validity of this scale, exploratory factor analysis with varimax rotation was performed on the data that showed the desirable validity of this scale.

In a study by Shokri et al. (2008), the Cronbach’s alpha coefficients for the subscales of failures, conflicts, pressures, changes, and stress were 0.74, 0.79, 0.70, 0.75, and 0.77, respectively. The Cronbach’s alpha coefficients for the subscales of physiological, emotional, behavioral and

cognitive responses and the total score of stress were 0.84, 0.80, 0.88, 0.74, and 0.80 respectively. It indicates the acceptable reliability of the subscales.

RESULTS

Table 1 depicts the normality test of structures by kurtosis and skewness in the current study.

The contents of Table 2 show that all the relationships are significant at $P < .01$ level. This correlation analysis provides insight into the two-variable relationships between the research variables. In order to simultaneously examine the research hypotheses, the Structural Equation Modeling Method (SEM) has been applied.

The proposed model of the present study consists of four variables including academic stress, response to academic stress, self-efficacy and academic burnout. The main fitness model was studied before

Table 1
Normality test of structures by Kurtosis and skewness

Kurtosis Standard Error	Kurtosis Coefficient	Kurtosis Standard Error	Skewness Standard Error	N.	Variables
0.256	3.129	0.128	0.602	361	Stressful factors
0.256	-0.291	0.128	0.230	361	Stress responses
0.256	-0.254	0.128	-0.071	361	Self-efficacy
0.256	-0.409	0.128	-0.032	361	Academic burnout

Table 2
Matrix of correlation coefficients between the research variables

	Variables	1	2	3	4
1	Academic stress	-			
2	Stress responses	0.47**	-		
3	Self-efficacy	-0.28**	-0.41**	-	
4	Academic burnout	0.22**	0.36**	-0.55**	-

Note: ** $P < 0.01$; * $P < 0.05$

examining the structural coefficients. The fitness of the proposed model with data based on fitness indices is shown in Table 3.

Although the values of some fitness indices in Table 3 indicate a fairly good fit of the proposed model with the data, some of the fitness indices have shown that the model needs to be improved. In this regard, promoting the fitness of the proposed model was done by eliminating the questions with the factor load of below 0.5 and the creation of covariance between the errors based on software suggestions and the research literature which resulted in the fitting indices of the final model reaching a desirable level. The fitting of the final model with the data based on fitness indices is shown in Table 4.

As shown in Table 4, the proposed model has a relatively good fit. After deleting the questions with factor load

less than 0.5 and correlating the errors associated with each structure according to AMOS software, the final model reached the desirable level.

Table 5 also shows the paths and their standard coefficients in the final model based on the output of the AMOS software.

As Table 5 shows, all the path coefficients to academic burnout are significant. Figure 2 shows the final model of the present study along with its path coefficients.

Table 6 shows the results of bootstrap in relation to indirect paths of academic stress to academic burnout with self-efficacy mediation.

The confidence interval for the path shown in Table 6 indicates that zero is not located at this distance. Therefore, the indirect path of the academic stress was significantly related to the academic burnout

Table 3
Fitness of the proposed model with data based on fitness indices

Fitness index model	X2	Df	X2/df	GFI	AGFI	IFI	CFI	NFI	RMSEA
Proposed model	16.71	2	8.36	0.98	0.84	0.97	0.98	0.97	0.11

Table 4
Fitness of the final model with data based on fitness indices

Fitness index model	X2	Df	X2/df	GFI	AGFI	IFI	CFI	NFI	RMSEA
Final model	16.73	3	5.58	0.99	0.90	0.98	0.98	0.97	0.05

Table 5
The structural model of the paths and their standard coefficients in the research model

	Paths	β	L
Academic stress	→ Academic burnout	0.33	0.04
Reaction to academic stress	→ Academic burnout	0.16	0.001
Academic stress	→ Self-efficacy	-0.11	0.04
Reaction to academic stress	→ Self-efficacy	-0.36	0.001
Self-efficacy	→ Academic burnout	-0.48	0.001

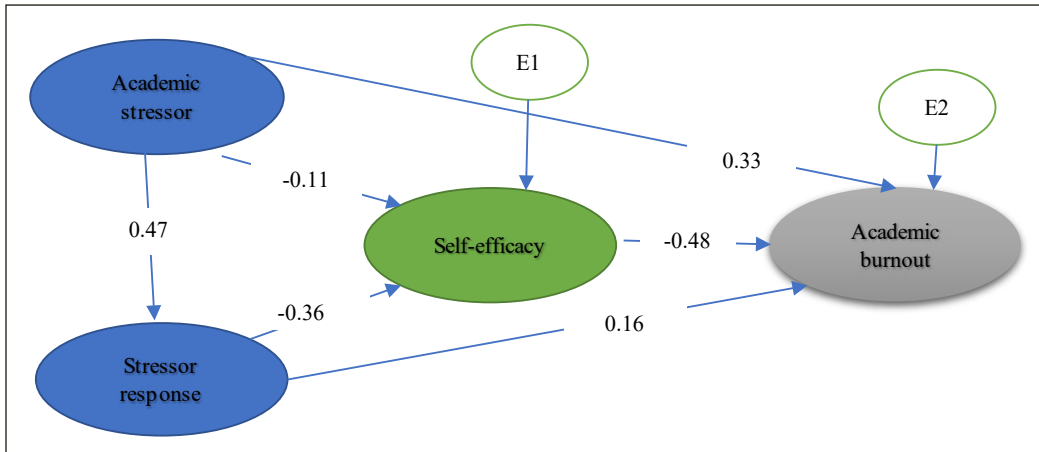


Figure 2. Final model of the present research along with standard path coefficients

Table 6
 Bootstrap results for the indirect path of academic stress and academic stress response to academic burnout through self-efficacy mediation

Path	Data	Boot	Bias	Standard error	Min	Max
Academic stress response → Self-efficacy → Academic burnout	0.1650	0.1650	0.0001	0.0279	0.1166	0.2270
Academic stress → Self-efficacy → Academic burnout	0.1616	0.1630	0.0014	0.0358	0.0971	0.2387

with self-efficacy mediation. Therefore, self-efficacy plays a mediating role in the relationship between the academic stress and academic burnout. The confidence level for this interval is 95 and the number of re-sampling for bootstrap is 1000.

Table 6 shows the results of bootstrap in relation to the indirect path of academic stress response to academic burnout through self-efficacy mediation.

The confidence interval for the path shown in Table 6 indicates that there is no zero at this distance. Therefore, the indirect path of academic stress response to academic

burnout was significant through self-efficacy mediation. Therefore, self-efficacy plays a mediating role in the relationship between the academic stress response and academic burnout. The confidence level for this interval is 95 and the number of re-sampling for bootstrap is 1000.

DISCUSSION AND CONCLUSION

In the present study, the relationship between the academic stress and stress response and academic burnout was investigated through the self-efficacy. The values of fitness indices indicate a relatively good fit of

the proposed model with the data. Results showed that there is a positive and significant relationship between the perceived academic stress and stress response. Moreover, there is a negative and significant relationship between the perceived academic stress and self-efficacy and also between the self-efficacy and academic burnout. Furthermore, the statistical significance of the indirect effect of self-efficacy in the relationship between the perceived academic stress and stress response with academic burnout was empirically supported by the partial mediating effect of self-efficacy. According to the research findings, academic stress has a positive and significant predictive power of academic burnout. Therefore, students with perceived academic stress have high academic burnout. This finding is consistent with the results of Fares et al. (2016), Hakami and Shokri (2015), and Jung et al. (2015). Students in the learning process due to their academic stress show a state of emotional exhaustion, a tendency toward depersonalization and feeling little progress (Maslach et al., 2001).

Therefore, in accordance with the Demands-Resources Model, it can be said that two processes occur in academic burnout: on the one hand, in the new curriculum, demands for study and effort and requests of professors from students are increased, and on the other hand, students who are aware of individual differences in their abilities do not have sufficient motivational resources to meet these academic demands; therefore, students are frustrated by the increasing demand,

academic requirements and relationships with their professors and classmates. The continuity of these two processes over time cause long-term stress, and ultimately burnout. This finding is in line with the results of research by Backovic et al. (2012), Choi and Lim (2016), Shin and Yu (2014), and Watson et al. (2008). As the degree of perceived academic stress among students increases, students experience higher levels academic burnout.

Based on the findings of this study, the response to stress had a significant predictive power of academic burnout. Thus, students who perceived academic stress show a wide range of psychological responses in the face of stressors. This finding is in line with the results of Gadzella and Baloglu, (2001), and Helbig and Backhaus (2017). Stress manifestations include physical injury, chronic energy shortages, lack of motivation, headache, digestive problems and sleep problems (Murray-Harvey et al., 2000). Considering the individual differences in the response to stress, it is important to adopt coping strategies against stressful learning experiences (Misra & Castillo, 2004).

In addition, in a study on the relationship between the stress and academic burnout among the nursing students in Hong Kong, Watson et al. (2008) concluded that students who experienced a lot of stress and used emotional coping style experienced higher levels of psychological illness and academic burnout. In other words, there was a positive and direct correlation between the stress response and academic burnout. What's

more, students with more severe stress response are less tolerant of failures due to their maladaptive emotions and the feeling of inability to manage the stress.

These emotions and academic experiences can affect the individual's well-being of by confronting the life or education environment and surrounding issues. Accordingly, the weakness in adapting to the stressful conditions and the more emotional and disturbed reactions will provide the basis for the occurrence and realization of academic burnout. Watson and Clark (1992) considered the coping strategies as important in relation to the stress response, pointing out that those who had avoidant coping styles find less compatibility with stressful conditions and could not quickly return to their primary condition. These characteristics make it difficult to tolerate the university environment and the students perceive more academic burnout.

Based on the research findings, self-efficacy mediates well the relationship between the academic stress and academic burnout. This finding is consistent with the results of Choi and Lee (2014), Jung et al. (2015), and Labrague (2014). Stressors disturb people who are unsure of their ability to solve their own problems. A strong performance empowerment allows one to continue to concentrate on the task, even in the face of situational stress and problem-solving bottlenecks. In contrast, low self-efficacy deviates the decision makers from thinking of the assignment, so that their attention focuses on the insufficiencies. Individuals with high self-efficacy tend

to concentrate on analyzing and solving problems, while people with low levels of self-efficacy are drowned in evaluation concerns such as skepticism about their skills and abilities and forecasting their failure before they try to solve the problem. These negative beliefs increase the psychological stress, reduce the use of cognitive strategies and, consequently, lead to academic burnout.

At the university, feedbacks of academic performance (presentation of a seminar and essay, student life, mid-term and end-of-year exams, student competitions for superior ranking, interpersonal relationships, or mistakes and inaccuracies or real problems on specific topics) are at large scale. In general, student life has potentially threatening events and perceiving personal performance or self-efficacy plays an important role in determining how much these events bring about stresses and anxieties. If one knows that their coping abilities cannot cope with the necessities of an event, this awareness will cause frustration, emotional arousal, distress and anxiety and the continuation of these negative emotions will lead to academic burnout among students.

Based on the findings of this research, self-efficacy mediates well the relationship between the stress response and academic burnout. This finding is consistent with the findings of the studies by Busari (2012), Mogg et al. (1990), Robbins and Judge (2013), and Thoits (1995). The stress response refers to a physiological or emotional arousal state that result from the perception of the tension or demand. This

situation is explained among people with high perceived levels of stress through a negative cognitive assessment - which exacerbates the next negative emotions. Reduced self-efficacy refers to feelings of inadequacy and the individual's negative assessment of oneself. Characteristics of people who suffer from reduced personal success include: failure and total dissatisfaction with self and their professional ability, and efficacy. Empirically, some evidence has shown that only those stressors that are mentally unsatisfactory are likely to exacerbate the symptoms of the disease and the disorder, and the positive life events have minor effects on the psychological symptoms. Academic stress has positive and negative effects, and if students are not able to cope with stressors, positive outcomes may be limited as they are more likely to experience negative stress. Ultimately, stress whether emotional or physical, natural, or created by man, public or private impacts the students' lives.

It is clear that any research is accompanied by limitations and barriers. One of the limitations of this research is its implementation on a sample of students at Yasouj University, and its generalization to other universities and other educational levels should be carried out with caution. Regarding the theoretical scope of the present findings and limitations, it can be suggested that due to the importance of its variables in students, the moderating variable of gender should also be considered in the study of academic burnout. Also, due to the fact that the self-efficacy mediates the

effects of academic stress and stress response on academic burnout, it is recommended to pay attention to the effect of this mediator variable and to promote this psychological variable in students in order to reduce academic burnout in educational centers.

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