Research Paper

Mediating Role of Perceived Academic Stress in Relationships of Self-compassion and Self-regulation With Academic Well-being in Female Students

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ABSTRACT

Background and Purpose: Stress, academic failure, and low academic achievement of learners are among the major problems in their academic lives and the education system of each country. The present study aimed to investigate the mediating role of perceived academic stress in relationships of self-compassion and self-regulation with academic well-being in female students in Kermanshah City, Iran.

Materials and Methods: The research method was descriptive-correlational. The statistical population included all the female senior high school students of Kermanshah, within the 2020-2021 academic years. The random cluster sampling method was employed to select 216 students who completed the academic well-being, self-compassion, self-regulation, and perceived academic stress questionnaires. Path analysis and bootstrap method were adopted to evaluate the proposed model and test indirect relationships, respectively.

Results: The results indicated that all direct paths were significant (P<0.001), except for the path from self-compassion to academic well-being. The relationships of indirect paths were made significant through the mediating role of perceived academic stress in academic well-being (P<0.01).

Conclusion: According to the research results, perceived academic stress had a mediating role in the relationship between self-compassion and self-regulation with academic well-being in students; thus, it can be useful for developing and designing specific plans to prevent academic failure and improving academic well-being of students.

Keywords: Psychological well-being, Self-compassion, Self-control, Stress, Students

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1. Introduction

Recently, the concept of academic well-being has been introduced as a new structure in academic achievement situations. It has also been the center of research attention in the field of education. Recent studies indicate a relationship between well-being and academic achievement [1]. The concept of academic well-being has been introduced into the field of education concerning the centrality of a person's educational environment in the lives of learning and the importance of academic achievement in their social and emotional functions. Hence, it is logical to address well-being in education and consider it an important index in educational processes. Generally, various factors are effective in the academic field of students, which requires serious attention to the analysis of the effects of different factors on the academic well-being of students [2].

A student's academic well-being is affected by many factors, one of which is self-compassion. Introducing the root of self-compassion as the stressful conditions of life, Reyes [3] believed that self-compassion would act as an effective emotion regulation strategy and lay the foundation for the emergence of positive feelings from compassion rather than being a negative or neutral model of emotion [3]. Self-compassion is a novel concept in psychology; it somehow replaces the concept of self-value [4]. The researchers indicated that there were significant direct paths from coherence, self-compassion, and responsibility to the academic well-being of students [5].

Self-regulation is another factor related to the academic well-being of students. Self-regulation is an active organized process in which students regulate their learning goals and try to monitor their motivation, cognition, and behavior [6]. The self-regulation strategies include the skills of self-study, self-evaluation, self-revision, and self-empowerment that help learners use cognitive processes [7]. In other words, facilitating self-regulation learning can bring about valuable outcomes in the learning process, education, and even success [8]. In this regard, the results of various research showed that there was a relationship between self-regulation and the academic well-being of students [9-12].

Perceived academic stress is an important factor that can affect the self-compassion and self-regulation of students and enhance their academic well-being [13]. Academic stress refers to the feeling of the growing need for knowledge as well as a person's perception of insufficient time for achieving knowledge. This concept also emphasizes five stressful factors of failures, conflicts, pressures, changes, and self-imposed tension in addition to four reactions to these (behavioral, physiological, cognitive, and emotional) factors [14]. According to the research results, academic stress ensues from the modern trend toward the acquisition of further information in the shortest time possible in a competitive environment. Pushing oneself to study as hard as possible to acquire the best results, best rank, and best scientific position can disappoint and stress out a learner. Academic stress is an important academic problem that affects millions of students worldwide every year [15]. These stresses result from the willingness to acquire further information within the shortest time possible in competitive environments. If academic stresses are severe and chronic, they can lead to anxiety, feeling of isolation, anger, depression, biological malfunctions, social malfunctions, academic malfunctions, insomnia, and even attempted suicide [16-18].

Hence, it can be stated that academic well-being refers to certain behaviors for the learning and achievement of learners in academic environments. The students who are motivated to learn a subject gain the readiness to partake in the activities that help them learn that subject. By contrast, unmotivated students do not act systematically in their learning attempts. They may be distracted during a class course, lack intellectual organization, and even refuse to review and repeat the lessons. Given the major roles of students in social development as well as the various problems that they face in academic environments, it is essential to plan to address their academic problems. Therefore, based on the issues outlined above, the present study aimed to investigate the mediating role of perceived academic stress in relationships of self-compassion and self-regulation with academic well-being in female students.

2. Materials and Methods

In this descriptive correlational study, path analysis was employed to determine the relationships between variables. The statistical population included all the female senior high school students of Kermanshah, within the 2020–2021 academic year. The random cluster sampling method was adopted to select ten schools in Kermanshah, and ten classes were then selected randomly as the research sample. The inclusion criteria were consent for participation, the age range of 15–17 years old, and the lack of any psychological disorders. The exclusion criteria were failure to answer all the questionnaire items and return of incompletely-filled questionnaires.

Ethical considerations were observed in this study such as information confidentiality. In total, 236 questionnaires were distributed among the students [19]. After the damaged questionnaires were excluded, 216 students were finally selected as the research sample.

Research instrument

Academic wellbeing questionnaire

Tuominen-Soini developed the academic well-being questionnaire by integrating four dimensions, i.e., school value, burnout in school, academic satisfaction, and involvement in school homework. This scale is a self-evaluative questionnaire that measures a respondent's success or failure through 31 items on a Likert scale. It has two types of scoring (seven-point and five-point Likert scale), and items 1 to 8 are reverse-scored. Items 1-8 deal with school value, 9-18 with burnout in school, 19-22 with academic satisfaction, and 23-31 with involvement in school homework [20]. Touominen-Soini et al. [20] reported the scale validity favorable and calculated the Cronbach alphas for school value, burnout in school, academic satisfaction, and involvement in school homework at 0.64, 0.77, 0.91, and 0.94, respectively. Moradi et al. [21] assessed the psychometrics of the Persian version of the scale and obtained the reliability of 0.88, 0.73, 0.73, and 0.75 for school value, burnout in school, academic satisfaction, and involvement in school homework, respectively. In the present study, the Cronbach alpha coefficient was 0.83 for the scale.

Self-compassion questionnaire

The self-compassion questionnaire was developed by Reyes in 2012. This 12-item tool is scored on a five-point Likert scale ranging from 1 to 5 (i.e., 1= completely disagree to 5= completely agree). The scores of this tool range from 12 to 60. A higher score indicates that a respondent has a higher level of self-compassion [3]. The reliability of the Persian version of the self-compassion questionnaire was obtained as 0.90 using Cronbach alpha [22]. In the present study, the Cronbach alpha coefficient was 0.87 for the questionnaire.

Self-regulation questionnaire

The short self-regulation questionnaire was developed by Carey in 2004. This 31-item questionnaire measures a respondent's capability of behavioral regulation to achieve goals. It is scored on a five-point Likert scale ranging from 1 (i.e., completely disagree) to 5 (i.e., completely agree). The 13 items are scored inversely [23]. The reliability of the Persian version of the self-regulation questionnaire was reported 0.87 using Cronbach alpha [24]. In this study, the Cronbach alpha coefficient was 0.83 for the questionnaire.

Perceived academic stress

This 16-item questionnaire was developed by Sun in 2011. It is scored on a five-point Likert scale ranging from 1 to 5 (i.e., 1= completely disagree and 5= completely agree). The scores range between 16 and 80. A higher score indicates that a respondent has a higher level of stress [25]. The authors [26] reported a Cronbach alpha of 0.73 for the Persian version of the perceived academic stress. In this study, the Cronbach alpha coefficient was 0.80 for the questionnaire.

Statistical analyses

Descriptive statistics (i.e., mean, standard deviation, and correlation matrix) were used for data analysis. Moreover, structural equation modeling was adopted to evaluate the proposed model in AMOS 26.

3. Results

The findings of demographic variables indicated that participants were aged 17.03±3.40 years old. Table 1 indicates descriptive statistics (i.e., Mean±SD, and

Table 1. Mean±SD, and Pearson correlation coefficients of the study variables

Variables	Mean±SD	1	2	3	4
1- Academic well-being	79.09±9.18	1			
2- Self-compassion	35.26±5.16	0.27**	1		
3- Self-regulation	93.74±10.03	0.54**	0.36**	1	
4- Perceived academic stress	48.36±8.09	-0.44**	-0.38**	-0.45**	1

**P<0.01

Shirmohammad et al. Academic Stress and Well-Being in Female Students. Iran J Health Sci. 2023; 11(1):29-36
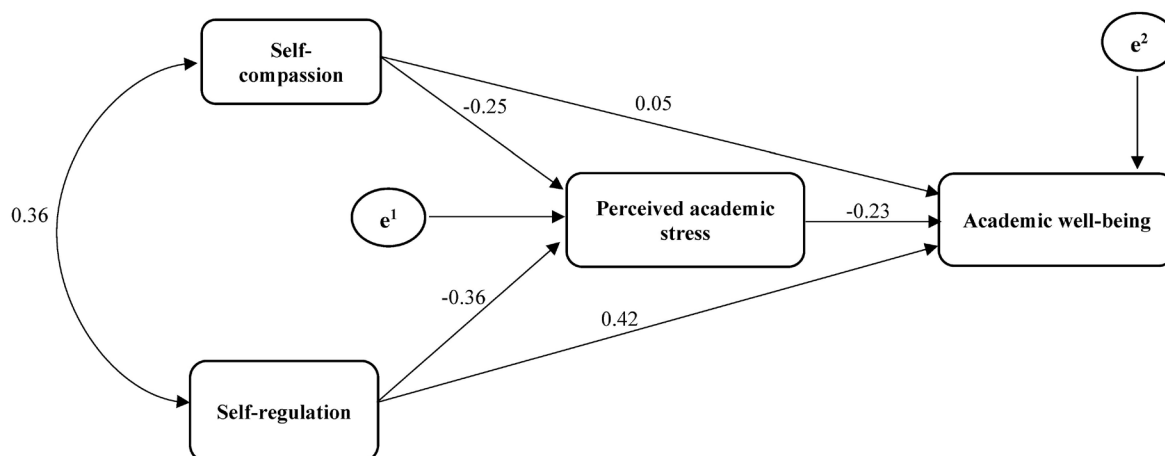
31

Figure 1. The initial model of the mediating role of perceived academic stress in the relationships between self-compassion and self-regulation with academic well-being

Pearson correlation coefficient) for the research variables. According to the Pearson correlation coefficient results, there were significant relationships between all research variables at P<0.01. In this study, path analysis was then conducted to evaluate the proposed model. Figure 1 demonstrates the initial proposed model to explain academic well-being based on self-compassion, self-regulation, and perceived academic stress.

According to Table 2, the root mean square error of approximation (RMSEA) was obtained at 0.371, which indicates that the initial model needs to be corrected. The initial model was saturated, for all the possible paths were drawn. Therefore, it was impossible to cal-

culate the chi-square and the other indices. After one of the paths (from self-compassion to academic well-being) was deleted, the model was not saturated anymore. It was then possible to calculate the chi-square and the other indices in AMOS. Figure 2 demonstrates the final model, in which the RMSEA was obtained at 0.001 which indicated the good fitness of the model.

Table 3 reports the findings of path analysis for direct hypotheses. According to Table 3, there was a direct and significant relationship between self-regulation and academic well-being (β=0.43, P<0.001) in the students. There was a negative relationship between self-compassion and perceived academic stress (β=-0.25,

Table 2. Initial and final models fit indicators

Fit Indicators	χ^2	df	χ^2/df	TLI	CFI	RFI	NFI	RMSEA
Initial model	-	-	-	-	0.91	-	0.84	0.371
Final modified model	0.57	1	0.57	1.00	1.00	0.98	0.99	0.001

Abbreviations: RMSEA, root mean square error of approximation; TLI, Tucker-Lewis index; CFI, comparative fit index; RFI, relative fit index; NFI, normal fit index

Table 3. Path coefficients of direct relationships between variables in the final modified model

Path	Final Modified Model		
	Path Type	β	P
Self-compassion → Academic well-being	Direct	-	-
Self-regulation → Academic well-being	Direct	0.43	0.001
Self-compassion → Perceived academic stress	Direct	-0.25	0.001
Self-regulation → Perceived academic stress	Direct	-0.36	0.001
Perceived academic stress → Academic well-being	Direct	-0.24	0.001

32

Shirmohammad et al. Academic Stress and Well-Being in Female Students. Iran J Health Sci. 2023; 11(1):29-36
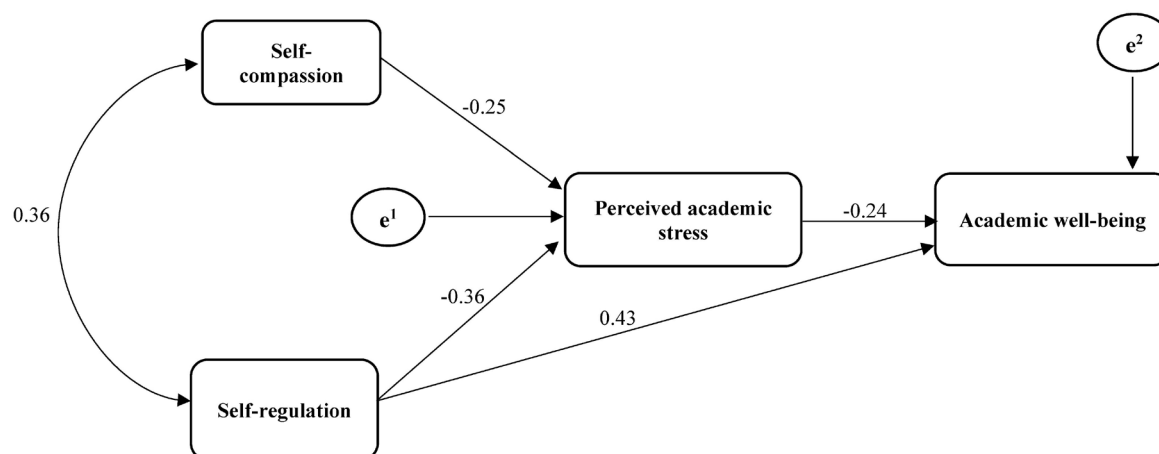
Figure 2. The final modified model of the mediating role of perceived academic stress in the relationships between self-compassion and self-regulation with academic well-being

P<0.001), and between self-regulation and perceived academic stress (β=-0.36, P<0.001) in the students. Moreover, there was a negative relationship between perceived academic stress and academic well-being (β=-0.24, P<0.001). There was no significant relationship between self-compassion and academic well-being in female high-school students.

According to Table 4, the confidence levels indicate the significance of the indirect path from self-compassion to academic well-being through the mediating role of perceived academic stress (β=0.110, P=0.005). Moreover, the indirect path from self-regulation to academic well-being was significant through the mediating role of perceived academic stress (β=0.081, P=0.005).

4. Discussion

This study aimed to investigate the mediating role of perceived academic stress in relationships of self-compassion and self-regulation with academic well-being in female students. The results indicated that all direct paths became significant, except for self-compassion to academic well-being. The indirect paths became significant through the mediating role of perceived academic stress in academic well-being. According to the research results, the proposed model had good fitness. Sahraei et al. [11] indicated that the assumed models of relative

mediation of emotions for positive and negative developments and perceived academic stress had good fitness in the relationship between beliefs in academic self-efficacy and academic wellbeing [11]. The researchers reported that beliefs in self-efficacy, self-esteem, and academic stress could predict the components of academic well-being [18].

The first finding depicted that there were no significant relationships between self-compassion and academic well-being. This finding is inconsistent with the results of previous studies [5]. In the reviewed studies, the relationship between self-compassion and academic well-being was analyzed through the Pearson correlation coefficient and regression tests and the results were significant. However, the hypotheses were tested through path analysis in this study. Although the relationship between self-compassion and academic well-being became significant in the Pearson correlation analysis, all effects of self-compassion on academic well-being were explained through mediating variables or indirect relationships in the model. In other words, self-compassion affected academic well-being in this model indirectly. To explain this finding, it can be stated that academic well-being and self-compassion are adapted from the theoretical foundations of optimistic psychology. In other words, concepts like self-compassion, satisfaction, mindfulness, optimism, hope, and self-efficacy are the com-

Table 4. Results of the bootstrap method for investigating indirect and mediating paths

Predictor Variables	Mediator Variables	Criterion Variables	Final Modified Model	
			β	P
Self-compassion	Perceived academic stress	Academic well-being	0.110	0.005
Self-regulation	Perceived academic stress	Academic well-being	0.081	0.005

Shirmohammad et al. Academic Stress and Well-Being in Female Students. Iran J Health Sci. 2023; 11(1):29-36

33

ponents of this approach [5]. Academic well-being and self-compassion entered schools in the same way. Students with self-judgment and negative emotions such as anger and anxiety are more prone to academic failure.

The results also indicated that there was a significant relationship between self-regulation and academic well-being. This finding is consistent with the research results of previous studies [9, 10]. To explain this finding, it can be stated that self-regulation refers to a person's self-conflict between mind and intelligence, between cognition and motivation, and between internal planning and internal activation. In each individual, the dominance of the former over the latter means high levels of self-regulation. In other words, self-regulation does not mean the suppression of emotions and feelings. By contrast, self-regulation means that we have a choice for how to express our performance [9]. Self-regulatory individuals evaluate the outcomes of their actions by inhibiting their behaviors consciously. Failure in self-regulation results in inappropriate or dangerous behaviors and has important social, economic, or hygienic impacts. In contrast, enhancing self-regulatory abilities such as self-efficacy and self-determination will contribute to improvement in adjusted academic well-being by facilitating the aspects of behavioral change trends.

There was a significant relationship between perceived academic stress and academic well-being. In other words, perceived academic well-being had a negative significant relationship with academic well-being. This finding is consistent with the research results of previous studies [11]. To explain this finding, it can be stated that Sarason introduced the nature of academic stress as a constituent factor of cognitive interventions in the attention process, distorted thoughts, and irrelevant thoughts of homework, something which would result in cognitive disorders in the learning process, academic failure, and avoidance of school. The perceived academic stress of students can be considered positive or negative experiences that affect their lives or functions, for educational and academic activities are never apart from stressful tasks. High school students experience a critical period of maturity and enter adulthood. Although the experience of stress is considered obvious among the majority of students, it can affect academic achievement if it is severe or prolonged [11].

According to the results, there was a significant relationship between self-compassion and academic well-being through the mediating role of perceived academic stress. The results also indicated that there was a significant relationship between self-regulation and academic well-being through the mediating role of perceived academic stress. No similar studies were found to support this finding and compare its consistency or inconsistency with the literature. According to the first hypothesis, there were no relationships between self-compassion and academic well-being. However, the indirect hypothesis indicated that self-compassion affected academic well-being only when it reduced the perceived academic stress of students. Naturally, different factors affect the academic achievement, well-being, and performance of students. Some of these factors improve academic well-being and performance, whereas others weaken the academic well-being and performance of students. Perceived academic stress is among the negative factors. The students who follow the positive components of self-compassion (self-affection, common human features, and mindfulness) and optimism in the academic process will experience positive components of academic well-being (interest in school and perceived academic self-efficacy). However, the students who follow the negative components of self-compassion (self-judgment, isolation, and over-imitation) and perceived academic stress in the academic process will experience the negative component of academic well-being (destructive behaviors) [27]. Hence, it can be stated that perceived academic stress acts properly as a mediating variable in the relationship between self-compassion and academic well-being. The students with higher levels of self-regulation will show higher levels of academic self-regulation and they are more hopeful at the time of academic problems. They can also manage the learning process better and withstand social obstacles and pressures. At the same time, self-regulation can directly drive a person's attitude positively in the face of academic difficulty. As a result, students will experience lower levels of perceived academic stress. Hence, the relationship between self-regulation and perceived academic stress is justifiable. It can be concluded that the perceived academic stress acted properly as a mediating variable in the relationship between self-regulation and academic well-being.

5. Conclusion

According to the research results, the proposed model had acceptable fitness. It is considered a major step in identifying the factors affecting the academic involvement and achievement of students. This model can be useful for developing and designing specific plans to prevent academic failure and improve the academic well-being of students. The academic experts and educational officials of Iran should plan the academic

34

Shirmohammad et al. Academic Stress and Well-Being in Female Students. Iran J Health Sci. 2023; 11(1):29-36

atmosphere of schools in a way that students can benefit more from their positive personal and behavioral aspects. Moreover, necessary steps should be taken to improve academic well-being by increasing academic optimism and decreasing perceived academic stress.

Study limitations

In this study, a research limitation was the use of a self-reporting tool that might affect the accuracy of reports given by the participants due to their biased social utility. Moreover, the statistical population included the female senior high school students of Kermanshah; thus, caution should be taken into account if the results are going to be generalized to other male and female students in other cities.

Ethical Considerations

Compliance with ethical guidelines

The Ethics Review Board of the Islamic Azad University Ahvaz Branch approved the present study (Code: IR.IAU.AHVAZ.REC.1399.101).

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Authors contributions

All authors equally contributed to preparing this article.

Conflict of interest

All authors declare no conflict of interest.

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35

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36

Shirmohammad et al. Academic Stress and Well-Being in Female Students. Iran J Health Sci. 2023; 11(1):29-36