Research Paper:
The Relationship Between Perfectionism and Resilience by the Mediation of Students' Academic Adjustment

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A B S T R A C T

Introduction: The effectiveness of perfectionism and resilience on the students' academic adjustment have been paid into attention by lots of researchers.

Objectives: The present study aimed to investigate the relationship between perfectionism and resilience by the mediating role of students' academic adjustment.

Materials and Methods: The statistical population consisted of all male high-school students in Bandar-e Langeh City, Iran, in the 2017-2018 academic year (N= about 1300). Using a multistage cluster sampling method, and Morgan and Krejcie's Table, 400 individuals were selected. The data-gathering instruments were Ahvaz Perfectionism Scale, Resilience Scale, and Academic Adjustment Inventory for high school students. A path analysis was used to analyze the obtained data by SPSS and LISREL.

Results: The present study findings suggested that perfectionism decreased the investigated students' resilience (B=-0.21, P<0.0001). Moreover, an educational adjustment had a mediating role between perfectionism and resilience (B=-0.24, P<0.0001). Besides, changes in the variance of resilience scores with the mediation of academic compatibility could be explained by perfectionism among the studied students (P<0.001).

Conclusion: The obtained data suggested that planning to improve students' academic adaptability could play an essential role in increasing resilience by reducing the negative impact of their perfectionism.

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1. Introduction

The positive psychology approach, with the motto of paying attention to human talents and abilities, has attracted the attention of researchers in various fields of psychology. This approach considers its ultimate goal to identify the constructs and practices that provide human well-being and happiness [1]. Therefore, the factors associated with human beings' adjustment with life's requirements and threats are the most fundamental constructs of this approach. An influencing factor on mental well-being is resilience [2]. Resilience has gained particular attention in the fields of psychology of development, family, and mental health; the number of studies relating to this construct is increasing [3]. The focus of educational systems on students' resilience in the academic environment reflects the importance of this matter. Focusing on the resilience of students means assisting them to develop a flexible and robust perspective instead of a defective one and focusing on risk factors [4].

Academic resilience reflects the extent to which a student can cope with the changing educational conditions and present new creative ways of thinking about issues. In other words, resilience is a thinking skill that refers to a student's ability to adjust to the new environment, as well as use and modifies challenges and strategies [5]. Resilience in educational settings is considered as the ability of students to cope with barriers effectively, stress, pressure, and generally-threatening factors. Students endowed with academic resilience to keep higher motivation for achievement and maintain their optimal performance despite stressful environmental events and in the face of conditions that put them in a state of poor academic performance and even quitting education [6].

Research suggests that by increasing resilience, academic procrastination decreases. Besides, resilience training could effectively reduce academic burnout, academic apathy, educational inefficiency, and academic failure [7]. This is because they have learned to use challenges and tests as an opportunity to empower themselves and to be successful in them [8]. Additionally, resilience in the school environment is an effective factor in academic achievement, despite environmental problems. Moreover, resilience is significantly related to positive outcomes regarding social support, high expectation, and positive growth [9].

Numerous factors could overshadow resilience in students. In this respect, perfectionism is among the constructs that could predict resilience among students [10]. Perfectionism is an attempt to fix defects [11]; perfectionists strive to be perfect in all aspects of life [12]. Perfectionism is a personality trait that could encompass all aspects of an individual's life and lead to the formation of inefficiency in them [13]; therefore, perfectionist parents tend to nurture perfectionist children [14].

Recognizing the positive and negative beliefs associated with perfectionism and their relationship with personality components is of significant importance. Accordingly, negative perfectionism is associated with pathological consequences, such as low resilience and self-esteem, anxiety and procrastination, irrational beliefs and negativism, and depression symptoms. Positive perfectionism is related to healthier experiences, such as attempts to promote motivation, positive affections, as well as high self-esteem, self-efficacy, and self-efficacy [15]. Blanknstein et al. [16] argued that positive perfectionism has a significant direct relationship with females' achievement motivation. Lu et al. [17] have also emphasized that in perfectionist individuals, excessive protection, selective attention to failure, and intolerance of error is observed; these underly the formation of dysfunctional beliefs and decrease the motivation of academic progress and resilience.

Another factor that could overshadow resilience in students is an academic adjustment [18]. Adjustment is the emotional and current stability in social relations as well as education and school, i.e. considered as emotional, social, or educational adjustment [19, 20]. Academic adjustment enhances learners' ability to adapt to the educational requirements and conditions, and roles that the school, as a social institution, poses for them [21]. The academic adjustment refers to a multidimensional structure consisting of one's ability to cope with expectations; such structure involves academic assignments, success in the educational environment, as well as a sense of happiness and attachment to the academic environment [22].

Adjustment in the realm of education could include behavioral and psychological developments during which individuals try to adjust themselves with their new environment and successfully adapt to their academic requirements and meet their learning needs [23]; therefore, an increase in their resilience will not be unexpected [24]. Academic adjustment is influenced by some factors, such as motivation, intellectual ability, family conditions, educational system, personal skills, sociocultural factors, psychological aspects [25], and perfectionism [26].

resilience is a critical issue in schools that should be regularly and purposefully evaluated, nurtured, and recognized by researchers and specialists in the realm of education [27]. Thus, given the relationships among the mentioned variables, it is clear that perfectionism and academic adjustment could influence students' resilience; however, there studies overlooked to examine these variables as a set of elements (directly or indirectly) affecting student resilience. Therefore, this study was conducted to answer whether perfectionism directly affects students' resilience, or is it through academic adjustment?

2. Materials and Methods

This was applied research using a descriptive-correlation method. The statistical population of this study included all junior male high-school students in Bandar-e Lengheh City, Iran. Using Morgan and Krejcie Table by a multistage cluster sampling method, a sample of 384 students was selected. For sampling, 12 high-schools were randomly selected from different geographical areas (north, south, east, & west) of Bandar-e Lengeh, and two classes were randomly selected from each school. Of them, those willing to participate in the research were selected. Then, the research tools were distributed with the collaboration of school authorities, and considering the half-hour intervals distributed among them; they were given the confidence of ethical and confidential principles. The study inclusion criteria were 15-17 years of age, a lack of history of consuming psychiatric medications, and the lack of physical handicap. Exclusion criteria included consuming psychotropic and psychedelic drugs, substance abuse and smoking, and the presence of psychiatric disorders.

The ethical considerations of the present research were as follows: 1. All individuals received written information about the research and participated in the research voluntarily; 2. The study participants were assured that all obtained remains confidential and will only be used for research purposes; 3. To comply with

privacy, the name of the study participants was not recorded. Moreover, the study participants were advised that at each stage of the research, they could discontinue their participation.

The below tolls were applied in the present research to collect the required data:

Ahvaz Perfectionism Scale (APS) is a self-report 27-items scale developed by Najjarian, Atari, and Zargar through factor analysis in a sample of 395 students from Ahvaz. Its raw materials are based on authoritative psychology texts, relevant items on the Minnesota Multiphasic Personality Inventory (MMPI] scales, Spielberger Anxiety, the Maudsley Obsessive Compulsive Scale, Jones's irrational thoughts, and clinical interviews. Questions of this scale have 4choices, i.e. never, rarely, sometimes, often, and the respondents must select one of them. In this scale, except for items 11, 16, 17, and 22, i.e. scored in reverse order, the rest of the questions are scored based on "1", "2", "3" and "4" points. The research revealed that the Cronbach's alpha coefficients for the whole sample were 0.90, 0.90 for females, and 0.89 for male subjects [28]. Cronbach's alpha coefficient for the questionnaire was measured as 0.81.

Conner-Davidson Resilience Scale (CD-RIS) questionnaire was developed by Conner et al. by reviewing the literature on resilience from 1991 to 1979 [29]. This instrument consists of 25 items that are scored on a Likert-type scale ranging from 0 (completely wrong) to 5 (always correct). Moreover, it has 5components; an image of personal self-esteem, trust in one's instincts, positive acceptance of change, and secure relationships, control, and spiritual influences. Conner and Davidson reported Cronbach's alpha coefficients of this scale in the range of 0.76 to 0.90. The 4-week test-retest reliability coefficient of it was reported to be 0.81. The reliability and validity of the Persian version of the resilience scale have also been verified in preliminary studies of healthy and patient samples [29]. Furthermore, its Cronbach's alpha
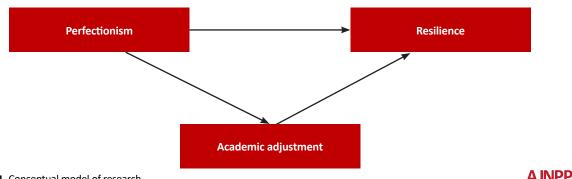

Figure 1. Conceptual model of research

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coefficient was reported to be 0.86. Cronbach's alpha for this questionnaire was calculated as 0.83.

Adjustment Inventory for high School Student (AISS): This questionnaire was prepared by Sinha and Singh [30]. It seeks to distinguish high-school students (age group 3 to 5 years) with reasonable adjustment from those with poor adjustment. The final form of this questionnaire is composed of 60 questions (2 questions for each domain). A high score indicates low adjustment, and a low score indicates high adjustment. This questionnaire can be manually scored. For responses that indicate adjustment, a score of zero is given; otherwise, a score of 1 will be provided. The reliability of this questionnaire was obtained as 0.96 using split-half and Kuder–Richardson-20 (K-R20) methods [31]. In this study, a Cronbach alpha of 0.86 was obtained for this inventory.

The obtained data were analyzed using descriptive (i.e. mean and standard deviation) and inferential statistics in SPSS and LISREL. To test the hypotheses of the research, Pearson's correlation coefficient and path analysis were used.

3. Results

Table 1 presents the descriptive characteristics and hypotheses of the normality of the research variables. Kolmogorov-Smirnov test was used to investigate the normality of the data distribution. The relevant results suggested that the level of significance for all variables was higher than the error level (P>0.05). Therefore, the

normality of distribution of the research variables was confirmed at a 95% confidence level. Durbin-Watson statistic was also calculated for perfectionism (1.64) and academic adjustment (1.97) variables that indicated the independence of the errors.

Table 2 summarizes the correlation matrix of the research variables. Based on these results, the correlation coefficient between the research variables was significant at a 99% confidence level. Examining the first hypothesis of the research indicated a significant direct relationship between perfectionism and resilience; the achieved results revealed a negative and significant correlation at a coefficient of -0.45 between the two study variables. Accordingly, the more perfectionism is increased, the less resilient the person will be. However, the academic adjustment had a reverse relationship with perfectionism and a direct relationship with resilience, with coefficients of -0.37 and 0.73, respectively. Thus, the second and third hypotheses were confirmed. Therefore, the more the academic adjustment increases in students, the lower perfectionism and higher resilience they will experience, and vice versa.

The results of the path analysis of the direct and indirect effects of perfectionism on resilience through academic adjustment are illustrated in Table 3 and model fit indices are demonstrated in Table 4. According to Table 3, the conceptual model of the research had a good fit with the data obtained from the investigated students. Thus, the results of the model indicated that the first degree of perfectionism had a direct and negative role

Table 1. Mean and standard deviation scores of research variables and Kolmogorov-Smirnov test data

Variable	Mean±SD	Kolmogorov-Smirnov Test	
		Sig.	Result
Perfectionism	65.04±6.28	0.143	Normal
Academic adjustment	98.19±11.19	0.06	Normal
Resilience	57.38±9.51	0.14	Normal

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Table 2. Correlation matrix between research variables

Variable	1	2	3
Perfectionism	-		
Academic adjustment	- 0.37 *	-	
Resilience	- 0.45 *	0.73*	-

*<0.10

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Table 3. Coefficients of regression of path analysis and their significance

Path		Path Coefficient	b	SE	t
Perfectionism	Resilience	-0.21	-0.578	0.111	-5.20
Perfectionism	Academic adjustment	-0.37	-0.221	0.03	-6.79
Academic adjustment	Resilience	0.65	1.04	0.06	15.81
The effect of mediating role of academic adjustment on resilience: ($0.65 \times -0.37 = -0.24$)					

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Table 4. Model fit indices of path analysis

Fit Index	X^2/df	RMSEA	NFI	NNFI	CFI	GFI	AGFI
Statistics	1.89	0.031	0.93	0.96	0.98	0.90	0.84
Approvable amount	P<5	P<0.06	P>0.90	P>0.90	P>0.90	P>0.90	P>0.80

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on resilience; it accounts for 21% of the variance of this variable, alone. Furthermore, this variable had a decreasing effect on academic adjustment. Therefore, by increasing one unit of perfectionism in students, their academic adjustment was reduced by 0.37. Concerning the impact of academic adjustment, the obtained results also reflected that this variable directly decreases resilience in students. In other words, with the increase of one unit in academic adjustment, the students' resilience rate increased to 0.65. Overall, regarding the multiplication of path coefficients, "academic adjustment perfectionism" and "academic adjustment with resilience" were identified; a total of 24% of the dependent variable (resilience) mediated via the independent variable (perfectionism). Such a relationship could be explained by the academic adjustment variable. Therefore, perfectionism, in addition to the direct effect, indirectly and by the mediation of academic adjustment, also influenced the level of resilience among the explored students.

4. Discussion

This research was conducted to investigate the relationship between perfectionism and resilience through the mediation of students' academic adjustment. In reviewing the first hypothesis, the study findings suggested that perfectionism decreased students' resilience. In other words, the more perfectionism increases, the lower the resilience of students will be. Accordingly, the level of students' resilience is sometimes affected by conditions and factors, including perfectionism. Perfectionism is a personality construct that could crucially affect the resilience of individuals; thus, as perfectionism increases, the level of individuals' resilience decreases. The term perfectionism is rooted in the educational system, which refers to a severe attempt or obsession to be the best in education. In other words, the concept of academic perfectionism is setting high standards for the completion of the ego [32]. Academic perfectionism reflects students' effort for unrealistic performance standards, including negative thinking and fear of failure; thus, it harms resilience.

Moreover, perfectionist students want to have high standards and have a strong need for others' approval. These students compare individual concerns about mistakes, fear of peers, parents, and teachers' criticism, as well as fear of the difference between the outcome and the defined standards. Perfectionist students seek to be perfect in all areas and are overly concerned with the family, peers, and teachers' judgments. Besides, they are subject to stress and mental tension due to putting themselves in stress-producing conditions. As a result, their resilience ability in education contexts decreases. Other factors that make perfectionist students less resilient include worrying about the wrong conduct, worrying about the quality of their work, refusing to participate in competitions due to the fear of failure, and evaluating their values only through their successes. This finding is consistent with that of Lu et al., [33].

In terms of the second hypothesis, the study findings suggested that perfectionism has a decreasing effect on students' academic adjustment. Therefore, perfectionists, although try to do their best, when they achieve the desired result, they feel dissatisfied. This feeling of discontent often leads to self-blame, e.g. when a student assumes

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there should not occur any slightest mistakes in performing school assignments, he/she begins to blame herself/himself when the error occurs; he/she sometimes considered himself/herself as powerless and worthless. This condition, i.e. a form of extreme perfectionism, compromises one's academic adjustment. Perfectionists convince themselves that achieving the highest levels of progress without bearing hardship is impossible; therefore, they become vulnerable to the experiences of failure that lead to incompatibility and instills the belief that the individual has no choice in his/her life [34].

Negative feelings about self and self-dissatisfaction are the critical elements of perfectionism that affect one's adjustment. When encountering life difficulties and failures in achieving a goal or experiencing the slightest adverse events in life, they face anxiety and worry by overly criticizing themselves concerned with their self-esteem. In other words, individuals with a negative view of themselves have various irrational evaluations and cognitive beliefs. They want to achieve the best outcomes in any situation and are extremely concerned about avoiding failure [35]. Instead of upgrading their skills, they are worried about judging their performance and assignments, which causes them to experience maladaptive behaviors. This finding was in line with those of Eum et al. [36] and Verner-Philon and colleagues [37].

In investigating the third hypothesis, the relevant data indicated that academic adjustment has a direct and positive effect on students' resilience. In other words, academic adaptation significantly impacts the resilience process of students to facilitate their ability to confront unexpected challenges. Not only does academic resilience depend on academic adjustment, but it also results from psychological factors that include peer adjustment, a sense of belonging to the school environment, and perceived social support. Additionally, having positive relationships and resilience in the learning environment improves students' resilience through reassuring and encouraging them in stressful academic situations. Moreover, said the collected data revealed that academic adjustment is a crucial variable related to resilience in the school environment. The research reported that academic adjustment affects students' resilience through reducing the risk of mental disorders, assisting in managing academic expectations, enhancing educational outcomes, and facilitating effective coping strategies in respect to academic stress.

The attainted findings highlighted that academic adjustment has a mediating role in the relationship between perfectionism and resilience. As a result, academic adjustment, by increasing positive emotions, enhances self-esteem, and successfully coping with negative experiences. Accordingly, academic adjustment leads to greater resilience through enhancing self-esteem as a mediating mechanism. Besides, those with resilience have a higher ability to adjust themselves with problems, compared to those with lower resilience. Moreover, the more people have the power in adjustment, in coping with life's stresses and challenges, the lower they will be exposed to psychological and emotional disturbances; consequently, they will enjoy a better health and well-being status. In addition, those with a higher level of adjustment consider problems, including academic issues, in a creative and flexible manner, make plans to solve them, and do not hesitate to seek others' help when needed. Furthermore, this group use adequate and appropriate resources to cope with problems that cause them to increase resilience (including academic resilience) by reducing negative perfectionism and negative evaluations and worry.

The most important study limitation was applying self-reporting tools for data collection. Accordingly, respondents may not have enough self-control and fail to respond responsibly. However, it was attempted to reduce the effects of this limitation by stating that there are no correct and wrong answers in this questionnaire and that the best solution would be to one that manifests their actual situation. Restricting the research population to male students in Bandar Lengeh was another limitation of the present study. Consequently, the obtained results cannot be generalized to female students and students in other cities. Therefore, it is recommended to use structured or semi-structured interviews in future research. Another suggestion is to conduct this research among female students and students of other grades and students in other cities. Overall, planning to promote students' academic adjustment could play an essential role in enhancing resilience by reducing the negative impact of their perfectionism.

The obtained data suggested that planning to improve students' academic adaptability could play an essential role in increasing resilience by reducing the negative impact of their perfectionism.

Ethical Considerations

Compliance with ethical guidelines

All ethical principles were considered in this article. The study participants were informed about the purpose of the research and its implementation stages and signed the informed consent. They were also assured about

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the confidentiality of their collected information. Moreover, they were allowed to leave the study whenever they wished, and if desired, the results of the research would be available to them. We would like to thank and appreciate all the participants in this research. This paper was extracted from the corresponding author's doctoral dissertation and received a code of ethics (IR. IAU.IAUBA.REC.1397.020) from the Ethics Committee of Islamic Azad University, Bandar Abbas Branch.

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Authors' contributions

All authors contributed equally in preparing all parts of the research.

Conflict of interest

The authors declared no conflicts of interest.

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