



Relationship of Perfectionism and Anxiety Sensitivity with Academic Motivation in University Students

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Abstract

Background: Academic motivation is a very important issue in university students. Studies have revealed the relationship of academic motivation with perfectionism and anxiety sensitivity.

Objectives: The purpose of this study was to assess the predictability of academic motivation based on perfectionism and anxiety sensitivity in university students.

Methods: In this descriptive and cross-sectional study, 425 students of Kermanshah University of Medical Sciences were randomly evaluated by three questionnaires in 2018 - 19: Inventory of school motivation, the positive and negative perfectionism scale and anxiety sensitivity index-revised. Cluster sampling was used to randomly select 60 students from each faculty.

Results: Anxiety sensitivity and academic motivation were significantly different between male and female students ($P < 0.05$) but perfectionism was not ($P > 0.05$). The highest correlation between the components of anxiety and academic motivation related to fear of cognitive symptoms while the lowest correlation related to fear of physical symptoms. Anxiety sensitivity had a greater impact and higher ability to explain the variability of academic motivation than perfectionism.

Conclusions: The findings of this study supported the ability to predict academic motivation based on anxiety sensitivity and perfectionism. As a result, this study could help design and implement interventions to improve parenting and increase academic motivation of students. The study's implications are discussed.

Keywords: Anxiety, Kermanshah, Motivation, Medical University, Perfectionism, Students

1. Background

Motivation has been a subject of scientific research for many years and has generally been linked to all behaviors of organisms. We wake up, work, do our daily routines or even learn, and all of these are affected by motivation. There are many theoretical foundations for this concept (1). Some of these ideas are overlapping to some extent while others use different vocabulary for the same purpose, and of course, some theories have used similar words for a completely different meaning (2). One type of motivation in humans is achievement motivation, which is in turn associated with attempts to achieve success and avoid failure. Accordingly, there are two types of motivation: success achievement and failure (3). Motivation is considered important for every human being, but among students, it can be much more important.

According to psycho-educational perspective "motivation to learn" is student's effort and energy to learn, work

effectively and achieve goals (4). In a study by Severiens and ten Dam in 2012 (5), three major factors were students' learning issues: (1) student characteristics that include motivation and cognitive skills; (2) institutional factors which include training quality and individual interactions, and (3) external factors including current occupation and family relationships. In relation to these factors, the personality characteristics of students may have the greatest impact on academic performance and their motivation to progress. One of the most important of these features is perfectionism (6, 7).

So far, various studies have investigated perfectionism and other problems experienced by university students (7-9). Perfectionism is created as a result of the parent-child interactions, attachment and parenting style (10) and is characterized by high standards for performance and flawlessness (11). Adaptive perfectionism can have a positive effect, however, maladaptive perfectionism can have a nega-

tive effect on performance (7). Stoeber and Eismann (11) reported that striving for perfection is associated with intrinsic motivation, higher effort and achievement while the pressures from extrinsic motivation are characterized by a negative reaction to imperfection and further distress. This study also showed that if perfectionist standards were adjusted by the individual, they can be an attempt to succeed, but if imposed by external standards, they can reduce the motivation for success. In a study on the relationship between perfectionism with anxiety, life satisfaction and academic achievement, it was indicated that sensitivity to mistakes can be considered a significant predictor of anxiety, also contingent self-esteem and compulsiveness could positively correlate with life satisfaction and academic achievement of elementary school-aged children (12). This study has not been conducted in another population yet. Flett et al. showed that perfectionism was associated with anxiety sensitivity and its components. Although this study closely examined the relationship between perfectionism and anxiety sensitivity, which individuals believe that anxiety-related sensations had harmful consequences, it did not explore this issue in relation to student's academic motivation (13). In fact, Ellis was the first one who raised the issue that perfectionists are likely to have high levels of anxiety sensitivity (13). However, in one study, anxiety sensitivity was predicted as a criterion variable by components of perfectionism (14).

2. Objectives

According to our knowledge, no study has examined the predictive role of anxiety sensitivity and perfectionism for academic motivation yet. Therefore, we aimed to investigate the relationship and predictability of academic motivation on the basis of anxiety sensitivity and perfectionism.

3. Methods

This is a descriptive and cross-sectional study. The statistical population of the study consisted of all students of Kermanshah University of Medical Sciences in 2018 - 19. A total of 425 students who met the inclusion criteria were evaluated. The sample size was calculated according to Krejcie and Morgan table and data were collected through three questionnaires. At first, 60 participants from each faculty (eight faculties) were examined, but finally considering the exclusion criteria, 55 participants were excluded from the study. The inclusion criteria included voluntary participation, informed consent and having enough time to answer the questionnaires. Exclusion criteria included

unwillingness of the persons to answer the rest of the questionnaires. In this study, the status of previous psychiatric care was not tracked.

Inventory of school motivation (ISM) has 43 items, each of which is scored on a Likert scale from 1 (strong disagreement) to 5 (strong agreement) (15). ISM includes eight components: interest in task, effort, competitiveness, social power, affiliation, social concern, praise, and token. The reliability of this scale has been investigated and its Cronbach's alpha coefficient has been calculated to be 0.67 to 0.82 (15, 16). In an Iranian sample, Cronbach's alpha of 0.93 was reported (17). In this paper, an average score is used to evaluate student's academic motivation.

The positive and negative perfectionism scale (PNP) evaluates perfectionism from a behavioral/functional perspective through two components (18). The names positive and negative perfectionism (as components) were derived from the relationship between positive and negative reinforcements with perfectionistic behaviors (19). PNP has 40 items, each scored on a Likert scale from 1 (strongly disagree) to 5 (strongly agree). The total score is calculated from the sum of items. Eighteen items relate to positive perfectionism and 22 items relate to negative perfectionism. Cronbach's alpha has been reported for positive and negative perfectionism subscales as 0.89 and 0.86, respectively (19, 20).

The original version of anxiety sensitivity index-revised (ASI-R) was designed in 1986 by Reiss and McNally (21, 22). This scale consists of 16 items scored from 0 (very low) to 4 (very high). ASI-R has three subscales including fear of physical symptoms, fear of cognitive symptoms, and fear of publicly observed symptoms (23). The internal consistency of the Persian version of the ASI was 0.89. The reliability of the subscales of fear of physical symptoms, fear of cognitive symptoms and fear of publicly observed symptoms was respectively reported as 0.86, 0.84, 0.85 (21).

Data were analyzed by SPSS-IBM-V.21. Pearson correlation, independent *t*-test, chi-square, and multiple regression were used to present the data according to the research hypotheses. Pearson correlation was used to determine the relationship between the components. Independent *t*-test was used to determine the difference between anxiety sensitivity, perfectionism and academic motivation based on sex and age difference. Chi-square test was used to determine the significant difference between some of the demographic variables. The aim of using multiple regression was to examine the predictive value of motivational achievement based on perfectionism and anxiety sensitivity.

4. Results

In total, 425 students were evaluated, of who 210 (49.41%) were female and 215 (50.59%) were male. The mean age of the participants in the study was 23.02 ± 2.05 years (range: 18 - 48 years). According to Table 1, there is no significant difference between the participants in terms of age and gender ($P > 0.05$), while the marital status of students was significantly different ($P < 0.001$).

Table 1. Demographic Features of Participants

Parameters	Statistics	P Value
Age, y		0.09
Female	22.87 ± 2.15	
Male	23.1 ± 1.88	
Gender, No. (%)		0.12
Female	210 (49.41)	
Male	215 (50.59)	
Marital status, No. (%)		< 0.001
Married	41 (9.65)	
Single	384 (90.35)	

The comparison of perfectionism, anxiety sensitivity and academic motivation among male and female students in Table 2 shows that anxiety sensitivity and academic motivation were significantly different between these individuals ($P < 0.05$) while perfectionism was not ($P > 0.05$).

Table 2. Comparison of Perfectionism, Anxiety Sensitivity and Academic Motivation of Male and Female Students

Parameters	Anxiety Sensitivity	Perfectionism	Academic Motivation
Gender			
Female	27.35 ± 6.23	102.01 ± 14.12	24.13 ± 3.68
Male	23.42 ± 5.98	103.16 ± 15.13	20.15 ± 3.01
P value	0.004	0.09	0.002

According to Table 3, the highest correlation between the components of anxiety and academic motivation related to fear of cognitive symptoms while the lowest correlation related to fear of physical symptoms ($P < 0.001$). Academic motivation had the highest correlation with positive perfectionism, and the lowest correlation with negative perfectionism ($P < 0.001$).

The results of multiple regression analysis show that anxiety sensitivity and perfectionism can explain 14 ($R^2 = 0.14$, $P < 0.01$) and 11 ($R^2 = 0.11$, $P < 0.01$) percent of the student's academic motivation changes, respectively. Accord-

ing to the results in Table 4, the effect of anxiety sensitivity on academic motivation $\beta = 0.32$ is significant ($P = 0.01$) and the effect of perfectionism is $\beta = 0.32$ and is significant ($P = 0.02$).

5. Discussion

Considering the importance of student's academic motivation and their personality traits that affect the level of perceived motivation, the present study provided empirical evidence of the impact of perfectionism and anxiety sensitivity on student's academic motivation. However, given the impact of student's academic achievement on the scientific, economic, and social development of a country, we expected that the results of this study can help develop more appropriate curricula for students and help improve parenting styles from earlier ages.

One of the goals of this study was to examine the gender difference of students regarding the level of anxiety sensitivity, perfectionism, and academic motivation. The results of this study showed that anxiety sensitivity was higher among female students than male students. This result was consistent with many studies (24-26). In a study by Silverman et al. in 2003 on 767 children and adolescents, the results indicated that young women had higher anxiety level than men (25). In another study by Walsh et al. on 1698 children and adolescents, similar results were obtained (24). These studies show that women have higher scores compared to men in general with anxiety sensitivity components such as fear of physical symptoms, fear of cognitive symptoms and fear of publicly observed symptoms, while a recent study showed that there are gender differences in this component (27). Some reasons regarding, women's more vulnerability to anxiety and increased likelihood to experiencing anxiety disorders could be menstrual cycles, menopause and reproductive strokes which can be considered in clinical situations (28).

Another result of the present study was the difference in the level of student's academic motivation based on their gender, which showed that female students had higher levels of academic motivation. In a study by Brouse et al. in 2010 on 856 students (29), it was shown that women had higher academic motivation than men. Vecchione et al. also showed that at lower ages (9 to 22 years), the academic motivation of girls was higher than boys, which was also consistent with the results of our study (30). Hence, by considering these studies, it can be concluded that women have more incentives to continue their education and success than men. In the Iranian society, emphasis on issues which relate to education is for both genders, albeit, the size of this emphasis is slightly different in both sexes. For example, Iranian culture em-

Table 3. Correlation Matrix Between Perfectionism, Anxiety Sensitivity and Academic Motivation

Variables	Positive Perfectionism	Negative Perfectionism	Total Perfectionism	Academic Motivation
Fear of physical symptoms	-0.12 ^a	0.29 ^a	0.18 ^a	-0.21 ^a
Fear of cognitive symptoms	-0.15 ^a	0.33 ^a	0.20 ^a	-0.42 ^a
Fear of publicly observed symptoms	-0.13 ^b	0.39 ^a	0.25 ^a	-0.35 ^a
Total anxiety sensitivity	-0.14 ^a	0.34 ^a	0.21 ^a	-0.38 ^a
Academic motivation	0.53 ^a	0.12 ^a	0.38 ^a	1
Mean	64.86	57.45	102.12	22.12
SD	9.77	8.14	14.97	3.12

^aP < 0.001.^bP < 0.01.**Table 4.** Multiple Regression Analyses for Predicting Academic Motivation by Perfectionism and Anxiety Sensitivity

Dependent Variable	Predictor Variable	B	β	t	Sig.
Academic motivation	Perfectionism	0.04	0.33	2.12	0.02
	Anxiety sensitivity	0.06	0.41	2.91	0.01

phasizes earning money for men, while emphasizing academic achievement for women. Furthermore, as marriage rates decline in Iran (31), women appear to have a higher motivation for continuing education.

Another result of this study based on gender status is that the total score of perfectionism was not significantly different between male and female students. According to our knowledge, many studies have been conducted on the components of perfectionism (32-34), but so far, few studies examined the total score of perfectionism between men and women. For example, Rekabdar and Soleymani in a study on 909 students reported no difference between perfectionism score of male and female students (35). The same result was obtained by Besharat and Kashanaki (36). Parenting styles such as authoritative, authoritarian, indulgent and neglectful can explain the effect of these styles on particular components of perfectionism. However, cultural issues should be considered in this regard.

Another goal of this study was to investigate the relationship between the components of anxiety sensitivity and perfectionism with academic motivation. Based on this, fear of cognitive symptoms had the highest correlation with academic motivation, while the lowest correlation belonged to fear of physical symptoms. Since cognitive problems can affect an individual's perception of the classroom as well as friendship, this conclusion cannot be overlooked that fear of cognitive symptoms has the greatest correlation with academic motivation. In connection with fear of physical symptoms, it can be said that this fear is related to the body image (37), which was studied in a

Turkmen study, and their results showed that intrinsic motivation for sport competence and physical strength subscales could lead to more academic success (37). Although there was no clear explanation for the lower correlation between fear of physical symptom and other components of academic motivation, this cannot underestimate the importance of this component in academic motivation.

Academic motivation had the highest and lowest correlation with positive and negative components of perfectionism, respectively. Positive perfectionism refers to adaptive and healthy aspects which serve as striving for excellence. This type of perfectionism is called "normal perfectionism", and individuals with this high-level attributions have standards and expectations with minimum of negative self-appraisal (38, 39). It has been shown that normal perfectionists have higher self-esteem than other groups (40, 41). Based on this, it appears natural to make students more successful in their pursuit of academic achievement by having this trait at a higher level. On the other hand, people with a higher negative perfectionism, also called neurotic perfectionists, are involved with negative self-appraisal, characterized by self-doubt and worrying about making mistakes (42). Despite the problems experienced by these individuals, lower academic motivation is also expected. Various studies showed that negative perfectionists were involved with a higher level of psychological disturbances such as depression and anxiety, and each of these disorders could affect their perceived motivation (40, 41).

The main objective of this study was to assess the predictability of academic motivation based on perfectionism and anxiety sensitivity. The results of multivariate regression analysis showed that anxiety sensitivity was more than predictive perfectionism and explains the variability of academic motivation. Perfectionism, as a personality trait, begins to grow from childhood and can be shaped as adaptive or maladaptive (43), but anxiety has been shown

to be a more fundamental construct that can be used as an underlying factor in tendency of perfectionist individuals. Along with this explanation, Flett et al. showed that anxiety sensitivity is to some extent predicted by perfectionism (13). This suggests that anxiety can play a more prominent role in predicting academic motivation as a trigger factor.

This study had some limitations. First, student's psychiatric status was not investigated. As the sample size was large, it was not economically feasible to examine this issue. Second, the study population in the present study was university students, so it is recommended that a similar study be conducted for different ages in future. Third, this study was descriptive, and it is recommended that a study be conducted with practical interventions regarding students' academic motivation in future.

5.1. Conclusions

In sum, findings of this study supported the ability of anxiety sensitivity and perfectionism to predict academic motivation. This conclusion suggests that parenting styles and constructive structures of personality could predict the motivation of individuals for achievement in future. The results of this study will also help set appropriate interventions to reduce negative perfectionism by focusing on some of the components of anxiety sensitivity, and ultimately increasing student's academic motivation.

Footnotes

Conflict of Interests: Authors have no conflict of interest.

Ethical Considerations: Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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