

Assessment of the Attributional Styles of High- and Low-grade Point Medical Students at Isfahan University of Medical Sciences: A Cross-sectional and Descriptive Study

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Abstract

Background: Academic failure is one of the most important issues for both family and students. It has many adverse consequences on students' mental health. Therefore, understanding the factors that influence academic achievement can help reduce academic failure and thus improve students' physical, mental, and educational status. This study aimed to investigate the relationship between students' attributional styles and academic achievement in medical students at Isfahan University of Medical Sciences.

Methods: The present study has a cross-sectional and descriptive-analytical design. Cronbach's alpha coefficient confirmed the reliability of the ASQ (Attributional Styles Questionnaire) questionnaire for each subscale. The sampling method in this study was census and consisted of 76 First- and Seven- Semester medical students at Isfahan University of Medical Sciences. In this study, Attributional Styles Questionnaire (ASQ) was used to measure attributional styles. Descriptive statistics and independent sample t-test were used through SPSS software version 25 for data analysis.

Results: The results showed there is a significant relationship between optimistic and pessimistic attributions and academic achievement. In terms of the overall score of the questionnaire, positive and negative attributions were significantly higher in medical students with higher grade point averages than students with lower grade point averages and academic probation ($P < 0.05$).

Conclusion: It can be concluded that there is a significant relationship between the medical students' attribution styles at Isfahan University of Medical Sciences and their academic achievement.

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Introduction

Academic failure is one of the most important issues for the family and those involved in education. Every

year, many students from different countries face the phenomenon of academic failure. This phenomenon and its economic effects have adverse consequences on students' mental health. Therefore, recognizing the

factors affecting academic achievement can help reduce academic failure and thus improve the students' physical, mental, and educational status.¹

"Attribution Style" is a single important factor that is closely related to academic failure. The concept of attribution is a principal matter in social psychology and it aims to clarify what rules we use when we are trying to justify behaviors and what mistakes we make.

The purpose of attribution theory is to study how individuals explain various events and seek a causal relationship between them.²

It is also one of the dynamic theories of motivational psychology that explain people's perception of the causes of events and assume that people have a natural tendency to understand why events occur, especially when they are important and impossible. This theory examines the reasons that people attribute to their successes and failures and determines the expectations and behaviors that affect future successes and failures.³

Social psychologists do not agree on the analysis alone and have proposed many theories to explain how it works. Cortez Suarez et al. showed that students attribute their performance to dimensions of attribution such as the core of causality (external and internal), stability, and controllability. People with low academic achievement (with low GPA (Grade Point Average) and probation history), attribute their failure to external, unstable, and uncontrollable factors such as luck and fortune, whereas people with high academic achievement attribute their success to internal, sustainable, and controllable factors such as effort.⁴ However, Henry et al. showed a negative relationship between attributional styles and academic achievement by attributing failures to internal, stable, and general factors and successes to unstable and external factors.⁵

Houston et al. found that students who attributed failures to intrinsic, stable, and general factors performed much better on homework.⁶ In his study, Davis showed that successful students used more internal attributions, while unsuccessful students used more external attributions.⁷

Generally, the more people attribute their success to positive and negative factors, the higher their self-esteem will be. But if they attribute their failures to internal and stable factors, they will probably lose more self-esteem,⁸ that is why Kadivar's study showed that the students with a positive attribution style had more self-esteem compared to students with a negative attribution style.⁹

Wilson et al. stated that educational institutions, through attribution change programs, provide a sensible empirical method for changing the individuals' causal beliefs, leading to increased

academic performance.¹⁰

This study also studied the relationship between attributional styles as a cognitive variable and achievement motivation as a non-cognitive variable or a personality trait with academic failure.

Therefore, we aimed to investigate the relationship between students' attributional styles and academic achievement in medical students at Isfahan University of Medical Sciences.

Methods

In this cross-sectional and descriptive-analytical study, 76 medical students of Isfahan University of Medical Sciences participated; 38 of them were students with high GPA and 38 with low GPA. First- to seventh-semester medical students who had a 5% high and low GPA had entered the study with a census sampling method. Individuals who had not completed the whole questionnaire were excluded.

The Assessment Styles Questionnaire (ASQ) developed by Peterson et al. in 1983¹¹ was used to assess attribution styles. It is a self-report tool to determine the individuals' attribution styles, including source of control (internal / external), degree of stability (stable / unstable), generality (general / specific), and controllability (controllable / uncontrollable).

In this questionnaire, individuals were asked to state a cause for each of the twelve hypothetical events and then rate the cause on a scale that fits three explanations. The initial version of the ASQ, with twelve hypothetical good and bad incidents, was administered to 145 students at University of Pennsylvania before.¹² There are four questions about each event that are always in a specific direction. The first question asks about the main cause of an event. Although it is not used in scoring, it is necessary to answer the questions as follows:

- A) Is the cause of the event internal or external?
- B) Is it stable or unstable?
- C) Is it general or specific?

Scores can be considered for each of the three proposed dimensions. Combined scores are the sum of each of these three dimensions as the most direct and stable predictor of depression. It also shows the sum of scores related to stability, , totality, and the level of hope.

Then, Descriptive statistics and independent sample t-test were used through SPSS software version 25 to analyze the data. Kolmogorov-Smirnov test was used to evaluate the normality of the scores. For all tests, a significance level of $P < 0.05$ is considered.

This study was confirmed by Isfahan University of Medical Sciences Ethics Committee, with the code 1398/264.

Table 1: Determining the Cronbach's alpha coefficients and the mean of the questionnaire structures of learning strategies and motivational beliefs in the present study

Dimensions of the questionnaire	Mean±Standard Deviation	Quantity	Cronbach's alpha
Positive	20.3±91.19	76	0.70
Negative	14.6±76.55	76	0.77
Total Score	20.82±167.75	76	0.90

Table 2: Determining and comparing the mean scores of the questionnaire structures of learning strategies and motivational beliefs in the study groups

Dimensions of the questionnaire	Study group	Mean±Standard Deviation	P**
Positive	Low-grade point average	15.9±81.15	0.008*
	High-grade point average	19.56±101.23	
Negative	Low-grade point average	16.23±80.34	0.01*
	High-grade point average	72.7±12	
The whole questionnaire	Low-grade point average	161.5±17.7	0.04*
	High-grade point average	174±22.1	

**Because of the normality of the variables and homogeneity of variance, an independent sample t-test was used to compare the data.

* The results are significant at the level of 0.05.

Results

The results showed there is a significant relationship between optimistic and pessimistic attributions and academic achievement. Table 1 shows the reliability dimensions of the Attribution Style Questionnaire (ASQ) for each subscale using Cronbach's alpha coefficient. The reliability of the questionnaire was confirmed in all sub-comparisons. Table 1 also shows the overall average of the studied indicators in all participants.

Table 2 examines and compares the mean scores of the Attribution Style Questionnaire (ASQ) among students with high GPA and students with low GPA at Isfahan University of Medical Sciences.

As Table 2 shows, in terms of positive attributions, the average score of medical students with higher GPAs is significantly higher than medical students with lower GPAs ($P < 0.05$). Considering negative attributions, the mean score of medical students with higher GPAs is significantly lower than medical students with lower GPAs ($P < 0.05$).

Discussion

This study aimed to evaluate the relationship between attributional styles in the academic achievement of medical students at Isfahan University of Medical Sciences.

Our study showed that students who attribute their failures to internal factors have a low GPA meaning low academic achievement, and students who attribute their success to general factors have a higher GPA. The findings of the present study are consistent with the results of the other studies.¹³⁻¹⁷

Weiner believes that students who attribute their failures to internal factors and their successes to external factors form a negative self-image, demotivating them to do their best in academic activities and fulfil their homework.¹⁸ In another

study, Grujina showed that students attribute their performance to dimensions of attributions such as the core of causality (external and internal), stability, and controllability. As people with low academic achievement (with low GPA and academic probation) attribute their failure to external, unstable, and uncontrollable factors such as luck, and people with high academic achievement attribute their success to internal, stable, and controllable factors like effort.⁴

Shahni Yilagh showed a negative relationship between students' negative attribution and academic performance. Students' negative and incorrect cognitions and beliefs about their abilities can lead to poor academic performance; at the same time, most students with poor academic performance have a pessimistic (negative) attributional style, leading to poor academic performance. This study showed a significant positive relationship between positive event attributions and academic performance. This indicates that the more students attribute their success to internal, sustainable, and general factors, the more successful their academic performance will be. In other words, more positive attributions can improve their academic performance.¹⁹

More recent studies confirmed that the most reliable predictor of student academic achievement, including increased achievement over time, was an optimistic attributional style for better experiences and achievements.²⁰ Bernieri et al. also showed that while the inclination to make global and stable attributions had no significant link with high school GPA, the tendency to see terrible occurrences as being produced by global and permanent causes (hopelessness) had a negative relationship with college GPA.²¹

Conclusion

According to the findings of the present study, it can be concluded that a significant relationship exists between

the attributional styles of medical students at Isfahan University of Medical Sciences with their academic achievement.

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