

Comparison of Academic Motivation, Academic Self-efficacy, and Optimism Among First- and Fifth-year Professional Doctorate Students of Kerman University of Medical Sciences, Kerman, Iran

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Abstract

Background: Educational situations greatly affect the mental growth and health of individuals, as well as their psychological resources. Of the psychological resources involved in education, academic self-efficacy, academic motivation, and optimism are noteworthy.

Objectives: The present study aimed at comparing academic self-efficacy, academic motivation, and optimism among professional doctorate students at Kerman University of Medical Sciences, Kerman, Iran.

Methods: A cross-sectional study was conducted on all the first- and fifth-year medical, dentistry, and pharmacy students of Kerman University of Medical Sciences in the academic year 2018-19 as the statistical population, of whom 266 subjects were selected by simple random cluster sampling. Data were collected using the Vallerand academic motivation and the Owen and Froman college academic self-efficacy scales, as well as the life orientation test (Scheier and Carver) questionnaires. MANOVA was used to analyze the data.

Results: Dental students had the highest level of self-efficacy ($P=0.007$). Also, the mean scores of academic self-efficacy ($P = 0.001$) and optimism ($P = 0.03$) were higher among the fifth-year students. On the other hand, in the interaction of the study field with the entry year, self-efficacy was significant ($P = 0.001$). There was no significant difference in the academic motivation among the students of different study fields ($P = 0.16$) and according to the entry years. ($P = 0.13$)

Conclusion: Dental students choose their field of study with more interest, which further maintains and increases their academic motivation during the seven years of academic education. On the other hand, interest in the field of study is one of the variables influencing the maintenance and increase of the self-efficacy construct over time.

Keywords: Academic Motivation, Academic Self-efficacy, Optimism, Medical Students

Background

Knowledge acquisition is considered an essential tool to achieve a better future. Many psychologists consider motivation as an important factor for success in knowledge acquisition (1-3). Motivation is a form of cognition and emotion that persuades people to do something or achieve a goal, and it is like a desire that

often leads to deciding to do something and strive over a period of time for obtaining a goal (4). Academic motivation can be defined as the pervasive internal factor that influences an individual to participate in educational activities (5). Although there are many conceptual perspectives on motivation, one of the most popular theories in this regard is the self-determination theory of motivation raised by Deci et al. (6). This hierarchical

model is relied on three kinds of motivation, comprising intrinsic, extrinsic, and amotivation (7). When behaviors are performed for pleasure; intrinsic motivation arises, like when a student studies psychology for the pleasure of learning about human thinking and behavior (2, 8). When behaviors are performed to achieve a goal or reward, not the activity itself; extrinsic motivation arises, like when a student goes to university in the hope of earning a higher salary, not because of the enjoyment of learning itself (9). Amotivation happens when people are not motivated due to not receiving any reward for their behaviors. Therefore, they do not feel any responsibility for the results of their activities (8, 10).

Academic motivation is an important aspect of students' learning and academic achievement, and reasons why some students are involved in learning and success while others experience failure (11, 12). Martin and Steinbeck, in a study on the role of puberty in motivation and academic achievement of students, concluded that motivation plays the most pivotal role in students' academic success (13).

Students who believe that they can perform certain tasks (have self-efficacy), value the nature of learning, experience lower levels of anxiety, use more cognitive strategies, and show more keen on learning which these motivational components play a pivotal role in academic achievement (14, 15). The concept of self-efficacy was first introduced by Bandura and received considerable attention over the past years. In the social cognitive theory of Bandura, self-efficacy means belief in one's own capabilities to organize actions required to attain a goal (16), which is known as a more important predictor of behavior than the individual's capabilities (17). In short, self-efficacy is a key cognitive process accomplished by the individual to organize his living conditions (18). Farajpour et al. showed in their study that self-efficacy scores vary across different disciplines (19).

Optimism is another cognitive variable that plays a pivotal role in education and mental health (20). The primary concept of optimism is developed from the behavioral self-regulation model. According to this model, optimists expect positive results (21); in other words, optimism is characterized by having positive expectations that increase motivation (22, 23).

Different studies are performed to determine the factors affecting the mental health of students of medical sciences universities (24-26). On the other hand, researches are also conducted on the behavioral differences of students of different entry years (27). However, to the best of the authors' knowledge, no study was conducted thus far on the psychological characteristics of students of different entry years. Researches on academic motivation concluded that having an appropriate motivation during the study facilitates learning, increases creativity, and reduces anxiety (28, 29). The low level of academic motivation is one of the problems of Iran's education system, which imposes adverse consequences on the educational, social, and family systems. Self-confidence in personal learning capabilities strongly influences academic motivation

and, ultimately, academic achievement. Also, self-efficacy affects stress tolerance. Optimism is also one of the psychological resources that protect students against mental complications. This positive cognitive view reduces the level of stress and depression.

Objectives

Considering the pivotal role of academic motivation, academic self-efficacy, and optimism in the mental health and academic achievement of students, the present study aimed at answering the question: "What are the differences of these characteristics among the students of different fields and entry years?"

Methods

The current descriptive-analytical cross-sectional study was conducted on all the first- and fifth-year professional doctorate students (Medical, Dentistry, and Pharmacy) of Kerman University of Medical Sciences, Kerman, Iran, in the academic year of 2018-19 (N= 450). The sample size was determined 250, using the Morgan table. A simple random cluster sampling method was used. In this way, some courses were selected from those held in December and January for the first- and fifth-year students. Then the questionnaires were completed by the students after obtaining permission from professors and consent from students. Totally, 273 questionnaires were completed, of which seven incomplete ones were excluded, and finally, 266 questionnaires were analyzed. In the present study, the three following questionnaires were used to collect data:

The Vallerand Academic Motivation Scale (AMS):

It consists of 28 items scored based on a seven-point Likert scale (from "inconsistent at all" to "completely consistent"), and the score of each item ranges from 1 to 7. The overall score of the scale ranges from 28 to 196. This scale is developed based on the theory of self-determination, includes seven subscales, and measures three types of intrinsic motivation (intrinsic motivation of knowledge, the intrinsic motivation of success, and intrinsic motivation of stimulation), three types of extrinsic motivation (external regulation, introjected regulation, identified regulation), and amotivation (30). Vallerand et al., reported the reliability of the subscales using Cronbach's alpha coefficient as 0.84, 0.85, 0.86, 0.62, 0.84, 0.85, and 0.85, respectively, as mentioned above and the whole scale as 0.71 (30). In the study by Weisani et al., the Cronbach's alpha coefficient for the intrinsic motivation, extrinsic motivation, and amotivation subscales was 0.84, 0.86, and 0.67, respectively (31). Also, the indicators of the confirmatory factor analysis confirmed the fitness of the model.

The Academic Self-efficacy Scale: It was developed by Owen and Froman to measure students' academic self-efficacy (32). The instrument has 33 items scored based

on a five-point Likert scale from very low (1) to very high (5); the overall score of the instrument ranges from 33 to 165. This scale assesses students' academic self-efficacy by items on "asking the teacher to re-explain a concept you did not understand" or "understanding most of what present in the classroom". One item was deleted in the Persian version of the scale due to inapplicability. The study by Saadat et al., reported the reliability of the scale as 0.84 using Cronbach's alpha coefficient (33).

Life Orientation Test (LOT): It was used in the current study to measure optimism. LOT, developed by Scheier et al. (34), is a self-report instrument, and its items are scored from 0 to 4, choosing one of the five options of strongly agree, agree, have no opinion, disagree, and strongly disagree. This test consists of 10 items that measure individuals' differences in optimism. In statistical analysis, four items (2, 5, 6, and 8) are ignored. Besides, items 3, 7, and 9 are scored inversely. The overall score of the test ranges from 0 to 24, the closer to 24, the more optimistic the individual. The internal consistency of the six items was 3.7, which is acceptable. Scheier et al., also reported the reliability of the test as 0.79 by the test-retest method within a 28-month interval, which indicates that the test is relatively stable (34). Hassanshahi translated LOT from English into Persian and reported the Cronbach's alpha coefficient of 0.74 and the test-retest-reliability coefficient of 0.65 for the Persian version (35).

Data on differences among groups of students in terms of the entry year and study field were analyzed using the multivariate analysis of variance (MANOVA) in SPSS version 21 (IBM Corporation, Armonk, NY).

Results

Totally, 266 students were enrolled in the study, of which 161 (60%) were female and 105 (40%) male, with a mean age of 21.50 ± 3.02 years. The demographic characteristics of the participants are shown in Table 1.

One of the assumptions of multivariate analysis of variance is the equality of variance of errors, in which the results of the Leven test indicate that this assumption is observed in the current study. The normality of data distribution was confirmed using the Kolmogorov-Smirnov test (P -value > 0.05). The lowest scores of academic motivation, self-efficacy, and optimism were 59, 40, and 7, and their highest ones were 193, 151, and 26, respectively.

In the interaction of the study field with the entry year, only the variable of academic self-efficacy was significant. (Table 2).

The Results of comparing dependent variables (Academic self-efficacy, Academic motivation, and Optimism) based on the year of entry and the field of study are presented in Table 3.

According to the table, there was a significant difference in academic self-efficacy according to the study fields and academic self-efficacy and optimism between the first- and fifth-year students

Dental students had the highest and medical and pharmacy students had somewhat equal scores in academic self-efficacy. On the other hand, in terms of the year of entry, the academic self-efficacy and optimism scores were higher in the fifth-year students than their first-year counterparts (Table 3).

Discussion

Paying more attention to the mental health of students, particularly medical sciences students who are responsible for the health of the community in the future, is of great importance, and identifying its influential factors is helpful. Considering the nature of medial fields and long-term psychological pressures, the psychological features of students of different medical fields, including academic motivation, academic self-efficacy, and optimism, may change. The present study aimed at comparing academic motivation, academic self-efficacy, and optimism among first- and fifth-year medical students of Kerman University of Medical Sciences.

Based on the obtained results, there were significant differences in academic self-efficacy and optimism scores among the first- and fifth-year students of medicine, dentistry, and pharmacy, which was in agreement with the findings of the study by Farajpour et al., indicating that the fifth-year dental students had the highest level of academic self-efficacy (19). In their research, Fattahi et al., concluded that most dental students were interested in their field of study, which increased over time (36). The results of the study by Valizadeh et al., showed that the feeling of self-efficacy affects the organization of lessons and interest in the study field, and enhances them. They also concluded that self-efficacy and discipline in educational situations lead to academic achievement, which in turn increases students' intrinsic motivation and, consequently, their positive feeling and interest in the field of study over time. Since most dental students choose their study field with interest, their intrinsic motivation, and, consequently, academic self-efficacy is maintained or increased over time (37). In general, it can be concluded that since the performance expected from students is an achievement in various fields, including academic and mental achievement, the variable of self-efficacy facilitates this progress.

People with high self-efficacy participate in works and continue striving until the problem is solved. In other words, they consider difficult situations as challenges to success (38). As mentioned earlier, self-efficacy is one's belief in his capability to accomplish a task and attain a goal, which is very much related to optimism in terms of cognitive construction. A positive belief that one can reach his goals has no result other than a positive expectation and optimism, and this positive belief organizes educational conditions that lead to academic achievement. In the present study, the mean scores of academic self-efficacy and optimism were higher among the fifth-year students than their first-year counterparts. When students

Table 1. The frequency of Students Based on the Study Field, Gender, and Entry Year

Entry Year	Gender	Medical Students	Dental Students	Pharmacy Students
2013	Female	34	21	24
	Male	18	9	16
2018	Female	29	19	34
	Male	27	11	24

Table 2. The Results of the Analysis of Variance for the Variables of Optimism, Academic Self-efficacy, and Academic Motivation Based on the Study Field and Entry Year

Group	Variable	Sum of Squares	Degree of Freedom	Mean of Squares	f-value	p-value
Study field	Optimism	23.83	2	11.91	0.88	0.41
	Academic self-efficacy	2952.10	2	1476.05	5.07	0.007
	Academic motivation	2173.49	2	1086.74	1.79	0.16
Entry year	Optimism	64.24	1	64.24	4.75	0.03
	Academic self-efficacy	4602.20	1	4602.20	15.83	0.001
	Academic motivation	1386.31	1	1386.31	2.29	0.13
Interaction of study field with entry year	Optimism	67.40	2	33.70	2.49	0.08
	Academic self-efficacy	5068.64	2	2564.32	8.71	0.001
	Academic motivation	2416.53	2	1208.26	1.99	0.13

Table 3. The Comparison of Academic Self-efficacy, Academic motivation, and Optimism Based on the Study Field and Entry Year

Group		Academic Self-efficacy Mean (SD)	Academic motivation Mean (SD)	Optimism Mean (SD)
Study field	Medicine	81.00(16.85)	125.04(25.51)	15.08(3.85)
	Dentistry	89.00(20.21)	118.95(20.69)	15.80(3.64)
	Pharmacy	80.00(17.38)	119.06(26.36)	15.68(3.58)
P		0.007	0.16	0.41
Entry year	First-year	79.00(16.38)	118.50(23.98)	15.10(3.47)
	Fifth-year	86.00(19.34)	124.91(25.65)	15.88(3.94)
P		0.001	0.13	0.03

are optimistic about the outcomes of their educational activities, the sense of self-efficacy is created or increased. In the interaction of the study field with the year of entry, only the variable of academic self-efficacy was significant. In general, self-efficacy is one of the most important determinants of academic achievement. Huston-Shaikh, in their study, noted the role of self-efficacy in meeting the needs of learning and cognition (39).

In the present study, the academic motivation had no significant differences among the students of different fields and entry years. Academic motivation is influenced by various factors such as environment and goal and is the cornerstone of student achievement (28). It can be concluded that different practical courses and, as a result, the experience of internships and new and unfamiliar environments during the study as a medical student, maintains academic motivation. Also, during the seven years of student life, the practical courses and, consequently, the practical experience from what the student has learned

thus far, increase in a real environment, which can prevent the decline of academic motivation.

According to the results of the present study, to promote mental health and academic self-efficacy, as well as positive cognitive beliefs, it is necessary to design and implement regular planning during the study period such as holding more workshops and practical classes. Despite the efforts made, the present study, like other research in the humanities, had some limitations such as the lack of information about the current educational, economic, social, and familial status of the students, lack of control over the mental states of the subjects when completing the questionnaires, and scarcity of domestic and international research sources corresponding to the subject of the study. Since the present study had a cross-sectional design, it is suggested that the longitudinal design be used in future research.

Conclusion

The results of the present study showed that the fifth-

year dental students had the highest level of self-efficacy among the study fields. Most students choose dentistry with interest and, consequently, their motivation and self-efficacy increase over time. Self-efficacy leads to positive expectations and optimism about educational conditions. The results also showed that the mean scores of academic self-efficacy and optimism were higher among the fifth-year students of all fields than their first-year counterparts. Also, academic motivation was not significantly different among students of various study fields and entry years, and practical courses and internships in new environments maintain the initial motivation over time.

Supplementary Material

Supplementary material(s) is available [here](#) [To read supplementary materials, please refer to the journal website and open http://sdme.kmu.ac.ir/jufile?ar_sfile=803230].

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Conflict of Interests: There is no conflict of interest.

Ethical Approvals: The present study protocol was approved by the Ethics Committee of the Department of Psychology, Shahid Bahonar University of Kerman, Kerman, Iran (ethical code: E.A.98.7.10.1). Informed consent was obtained from all participants.

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