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Evaluation of Relationship between Academic Motivation and Achievement in Students of Zanjan University of Medical Sciences

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Abstract

Background & Objective: Considering the significant importance of academic achievement of medical students in the improvement of society health, this study aimed to evaluate academic motivation and its relationship with academic achievement.

Materials and Methods: This cross-sectional research was conducted on junior students in fields of medicine, dentistry and pharmacy of Zanjan University of Medical Sciences, Zanjan, Iran in 2016. Subjects were selected through convenience sampling and filled Herman's motivation questionnaire. Data analysis was performed in SPSS using Pearson's correlation coefficient and t-test ($P<0.05$).

Results: In this research, 85% of the students were within the age range of 24-26. In total, 53.1% of students were male and 46.9% of them were female. In terms of marital status, 85% and 15% of the participants were single and married, respectively. Moreover, 25.9% of the students had a quota and 74.1% had no quota. Furthermore, 52.4% were living in dormitories and 47.6% were residing in other places. After the evaluation of the medicine, pharmacy, and dentistry students, their academic motivation score was 2.83, 2.87, and 2.86, respectively. According to the results, students residing in places other than dormitories had a higher motivation level, compared to those living in dormitories. Moreover, a significant relationship was observed between motivation and score of basic science GPA.

Conclusion: Given the fact that only living in dormitories reduced motivation in students, it is recommended that counseling meetings be held to familiarize students with this type of life and facilities in dormitories be improved to increase the motivation of students residing in dormitories.

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Introduction

The problem of success or failure in education is one of the most important concerns of any educational system. Success and academic achievement in each society demonstrate the success of the educational system in the targeting and focusing on the individual needs. Among the most important concerns of professors, education managers of universities and families of students are the academic achievement and prevention of students' academic failure (1). Academic achievement refers to the learned or acquired ability of an individual in academic subjects, which is measured by standardized or teacher-made tests (2). Continuous evaluation of the educational status of students during the education period and assessment of the associated factors is one of the essential and inevitable aspects of improving the educational system quality, especially in universities, which is among the priorities of education development programs all over the world (3).

Academic failure is the opposite of academic achievement, which according to several studies, has a significant impact on the fate of individuals, imposing a huge burden on the family and the community (4). It has often been observed that while students are very similar in terms of learning abilities and talents, they greatly differ in academic achievement. This difference is not just observed in learning of academic courses and can also be found in other non-academic activities (5). A literature review revealed that academic achievement is affected by the interaction between situational variables, such as program, educational methods, emotional and physical conditions of the educational environment, attitude toward educational issues and academic motivation of learners (6).

Motivation is one of the most important powerful resources that affect the behavior of learners in the school, determines the strength and stability of the behavior, and empowers students to achieve their goals and acquire the abilities to perform necessary tasks in specific situations (7). In a teaching-learning situation, there is a correlation between motivation and willingness, readiness and effort of learners (8). Achievement motivation is the tendency to attempt at selecting and carrying out activities, the purpose of which is to achieve success or to avoid failure. The implication of the achievement motivation on this intrinsic state implies its widespread impact on various behaviors and academic activities and other personality traits of individuals (2).

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Motivation is an inherent phenomenon that is affected by four factors, namely, the situation (environment and external stimuli), temperament (internal mode and state of the organism), purpose (the goal of behavior, purpose, and tendency), and tools (means of achieving the goal) (9). Experts in this field have divided motivation into two main groups of intrinsic and extrinsic motivation.

The intrinsic motivation components are internal and personal reinforcements that create the necessary attractiveness of an activity. On the other hand, extrinsic motivation elements are external reinforcements that motivate individuals to achieve an independent goal. The combination of intrinsic and extrinsic motivations directs academic behaviors and activities of learners (10). After the evaluation of previous studies, it concluded that an association exists between learning and motivation in a way that previous knowledge of learners affects their academic motivation (11). Identification of academic motivation and its effective factors on the learning process of students helps the professors adopt more efficient techniques in designing and implementing their curriculum.

Various questionnaires have been used to assess the level of academic motivation of students and its different dimensions in previous studies. In some studies, a significant relationship was found between academic motivation and factors such as age (12, 13), gender (9, 13, 14), marital status (15), and field of education (16). In addition, a few studies found that academic motivation affects the level of academic success of students in various fields of study (9, 13, 14). However, little research has been conducted on the role of motivation in academic achievement in the field of medical sciences (14-16). Considering the significant role of the graduates of medical sciences in providing health to people of the community, and given the importance of training successful people in these fields to promote the health of the community, and with regard to the current gap specifically in the area of recognition of academic motivation of medical students in the country, especially in Zanjan University of Medical Sciences, this study aimed to evaluate the academic motivation and its role in the academic achievement of students in the fields of dentistry, medicine and pharmacy of Zanjan University of Medical Sciences in 2016.

Materials and Methods

This cross-sectional research was conducted

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to evaluate the motivation for academic achievement of students and its relevance to the academic success of these individuals in Zanjan University of Medical Sciences in 2016. Subjects were selected from all junior students in fields of dentistry, medicine, and pharmacy through non-randomized convenience sampling. The inclusion criterion was being a junior student studied in the mentioned fields, whereas exclusion criteria were being a transferred or guest student or not having to a willingness to participate in the study. Research tool included the Hermans questionnaire measure of achievement motivation, which is a 29-survey and evaluates nine features of wish level, motivation for improvement, resistance to tasks with moderate difficulty, dynamic perception of time, the desire to try again in performing half-finished tasks, futuring, attention to the criterion of competence and compassion in selecting friends and colleagues, recognition through good performance, and performing the job perfectly (17).

Items of the questionnaire were incomplete sentences and 4 options were provided for each item. In addition, 4 options were given for each of the 29 items to unify the value of questions. These items were scored based on the severity of achievement motivation from high to low. Therefore, some items were positive and some were negative, where the scope of changes was 1 to 4 for each item and all of the items are between 29 and 116. It is notable that the test was interpreted based on the total score. Therefore, the total score of an individual higher than the average was indicative of the higher level of motivation while scores below the mean level represent the low level of achievement motivation. Designing of the items of this questionnaire based on previous studies on academic motivation and estimation of the correlation coefficient of the questionnaires with success-oriented behaviors confirmed the validity of the tool (r=0.88). Reliability of the tool was estimated by various researchers within the range of 0.67-0.93 (9, 13-16). In the present study, the reliability of the survey was estimated at the Cronbach's alpha of 0.56 after collecting the data from 30 students at three-week intervals.

After the approval of the research by the ethics committee, Hermans questionnaire was delivered to the students in-person and was immediately collected after being filled through self-report. Participants of the research were ensured of the confidentiality terms regarding their personal information. In

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addition to completing Hermans questionnaire, data on demographic characteristics (e.g., age, gender, marital status, and housing status) of the subjects were collected during the process. The basic and clinical sciences GPAs were received from the relevant schools for each questionnaire. In these forms, university acceptance quota of the subjects was considered in addition to GPA. In the end, the obtained data, including a score of questionnaire along with demographic characteristics and basic and clinical science GPAs, were recorded in a table designed for this purpose. Data analysis was performed in SPSS using t-test (for quantitative comparison of the study groups), Pearson's correlation coefficient, and Kolmogorov–Smirnov test (to evaluate the normal distribution of the quantitative data). In addition, P-value of less than 0.05 was considered statistically significant.

Results

In total, 148 out of 155 distributed questionnaires were completely filled. The majority of the subjects were single and within the age of 24-26 years with no quota. In this research, independent t-test and one-way analysis of variance (ANOVA) were applied to compare the level of motivation for academic achievement in females and males, married and single students, students residing in dormitories and other places, students with and without quota, and students in fields of dentistry, medicine and pharmacy. After the assessment, no significant difference was observed between the groups in terms of motivation foracademicachievement(Table 1). In addition, Chi-square was applied to evaluate the possible relationship between Hermans motivation score and GPA of students as a factor for academic achievement. In this regard, the motivation scores of Hermans were divided into two upper and lower sections. Moreover, basic and clinical GPA of students were classified into three categories of 12-14, 14-17, and 17-20. According to the results, a significant relationship was observed between basic science GPA and motivation for academic achievement of students (Table 2). The same test was used to assess the relationship between motivation score of Hermans and the variables of gender, housing status, and quota. Moreover, a significant association was found between the housing status and score of motivation for academic achievement, where students living in places other than dormitories had higher motivation,

compared to individuals residing in dormitories (Table 3).

Table1: Frequency of Demographic Variables and their Relationship with Motivation Scores Respectively (p<0.05).

		n	Percent	Mean	Standard Deviation	t-test Statistic	Significance
Gender	Female	69	46.9	2.84	0.274	-0.510	0.611
	Male	78	53.1	2.86	0.287		
Marital status	Single	125	85.0	2.85	0.273	-0.440	0.661
	Married	22	15.0	2.87	0.322		
Quota Reasonably	Non-Quota	109	74.1	2.84	0.256	0.597	0.552
	Quota	38	25.9	2.87	0.340		
Place of Residence	Dormitory	77	52.4	2.81	0.032	-1.83	0.068
	Non-dormitory	70	47.6	2.88	0.032		
						One-Way ANOVA Statistic	**Significance**
Field of Study	Dentistry	42	28.6	2.86	0.313	0.240	0.787
	Medicine	59	40.1	2.83	0.278		
	Pharmacy	46	31.3	2.87	0.231		
Age	24-26	125	85	2.84	0.29	0.210	0.811
	26-28	17	11.5	2.89	0.220		
	>28	5	3.5	2.88	0.180		

Table 2: Comparison of Hermans Progress Motivation Scores with Average Score of Basic and Clinical Sciences Respectively

		Hermans progress motivation scores		Chi-Square Statistic	Significance
		>Average Score	<Average Score		
Average Score of Basic Science	12-14	18	17	6.580	0.037
	14-17	40	52		
	17-20	15	5		
Average Score of Clinical Science	12-14	21	18	0.387	0.0824
	14-17	45	48		
	17-20	7	8		

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Table 3: Comparison of Hermans Progress Motivation Scores with Gender, Place of Residence and Quota Reasonably

		Hermans progress motivation scores		Chi-Square Statistic	Significance
		>Average Score	<Average Score		
Gender	Female	32	37	0.561	0.454
	Male	41	37		
Place of Residence	Dormitory	33	44	2.99	0.084
	Non-Dormitory	40	30		
Quota Reasonably	Non-Quota	54	55	0.002	0.961
	Quota	19	19		

Discussion

Given the high reliability and validity of Hermans questionnaire, it has been exploited by various studies to evaluate the level of motivation (12-16). In the present study, the mentioned survey was applied to evaluate the relationship between motivation for academic achievement and academic success and other variables of age, housing status, gender, and marital status. In this research, motivation scores were divided into 3 categories of 1-2 (weak), 2-3 (moderate) and 3-4 (good). In this regard, mean score of motivation for academic achievement was 2.90, which was considered a moderate level and is in congruence with the results obtained by Bakhshandeh et al. (2015) in a research on nursing students of Jundishapur University of Medical Sciences, Ahvaz, Iran (18). Nevertheless, Nouhi et al. in Baqiyatallah University of Medical Sciences and Firouznia in the University of Isfahan reported good and relatively good motivation scores respectively (9, 15).

According to the results of the current research, no significant difference was observed between the male and female students in terms of score of motivation for academic achievement, which is in line with the results obtained by Nouhi et al. (2010) in Baqiyatallah University of Medical Sciences and Atashkar et al. in Tehran University of Medical Sciences (12, 15). Meanwhile, Hamid in South Africa and Feizipour in Urmia reported that motivation score of female students was significantly higher, compared to male individuals (14, 19). In addition, Firouznia concluded in a research in

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Isfahan University of Medical Sciences that the components of the motive of effort and competition were more observed in male students, compared to female students (9).

This lack of consistency between the results might be due to various male to female ratio, ages and fields of study. In the studies by Feizipour and Firouznia, most of the assessed students were female, whereas the number of male students was slightly higher in the current study. In the research by Feizipour, the cause of lower motivation level in males was their higher level of concerns about their future, such as marriage and occupation (14). Meanwhile, Firouznia considered the future responsibilities of males, such as housing preparation, management of life and guarding a family or tendency toward better occupational success in the future, the main causes of their higher level of motivation (9).

According to the results of the current research, no significant difference was found between motivation for academic achievement and age of students, which is consistent with the results obtained by Firouznia, Nouhi and Molazadeh (9, 15, 16). Nevertheless, Tamanaeifar found a significant association between age and academic achievement of BSc students in University of Kashan (13). This inconsistency in results might be related to the evaluated population, mean age of the participants and field of study. Tamanaeifar evaluated non-medical undergraduate students with a mean age below the participants of the present study. According to the results obtained by Atashkar, aging was associated with higher academic satisfaction and lower academic motivation in students of Tehran University of Medical Sciences(12).In the present study about 85% of the students were within the age of 24-26 with only a few of them being aged above 26 years old. With regard to the slight age difference in the evaluated students, it is prbable that age has an impact on the academic motivation of students.

According to the results of the current study, no significant relationship was found between motivation for academic achievement and quota status of students. In this regard, Atashkar found no relationship between acceptance quota and academic motivation and satisfaction of students in Tehran University of Medical Sciences (12). Despite the difference in the acceptance score of university exam of students with and without quota, factors such as education environment, academic satisfaction and hope for a good job in the future affect the motivation of students, especially in the last semesters. In the present

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study, no significant relationship was observed between academic achievement and marital status of students, which is in congruence with the results obtained by Molazadeh et al., who conducted a study on students of Fasa University of Medical Sciences, and results of Atashkar in 2014 (12,16).

In a research by Zooein, the relationship between marital status and academic performance was evaluated in 199 married students, and the results were indicative of success in the academic achievement of married students (20). In the research by Nouhi, a relationship was found between academic achievement and motivation of married students (15). In the current research, the lack of impact of marital status might be due to the fact that 85% of the participants were single and the rest were married. In addition, our findings demonstrated no significant association between academic motivation and field of study of students. Meanwhile, Atashkar reported a relationship between academic motivation and field of study of students, where dental students had higher academic motivation and satisfaction, compared to students in the fields of medicine and pharmacy (12).

It seems that other factors, such as age, place of education, and the ratio of students in each field, are the cause of the difference between our findings and the results of Atashkar. In the present research, 40.1%, 28.6%, and 31.3% of the students were in fields of medicine, dentistry, and pharmacy, respectively, whereas 69.7%, 13%, and 17.3% of the students were studying medicine, dentistry and pharmacy, respectively in the research by Atashkar. According to this researcher, proper work market and social status was the cause of higher motivation level in the dental students. In the research by Molazadeh et al., students in fields of medicine and health of Fasa University of Medical Sciences had higher motivation level, compared to paramedical and nursing students (16).

After obtaining the mean score of motivation and diving the students into two groups of above and below the mean score, a significant relationship was observed between the motivation and academic achievement of students in basic sciences course. Nevertheless, no significant association was found between academic motivation and achievement during the clinical course. In this regard Roshan Milani reported significant relationship between basic sciences score and academic motivation(21) and Firouznia found

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a significant and direct association between academic motivation and basic sciences and clinical GPAs of medical students in Isfahan (9). Furthermore, results obtained by Feizipour and Tamanaeifar were indicative of a relationship between academic motivation and achievement (13, 14). In this respect, Gholami suggested that factors that improve academic motivation be used to increase the academic achievement of students (22).

In the basic sciences course, the majority of the curriculum is theoretical and lack of academic motivation can have adverse impacts on the academic motivation of students. In the clinical course, evaluations are often a combination of theoretical and practical performances and it seems that practical performances are less affected by motivation since immediate outcomes of a task obligate students to have better performances. According to the results of the current study, students living in places other than dormitories had a higher academic motivation level, compared to students living in dormitories. However, no significant relationship was found between motivation and housing status of students in the research by Atashkar (12). The higher level of motivation in non-dormitory students might be due to the living situation in dormitories, being separated from family, and emotional issues. It is suggested that further studies be conducted on students residing in dormitories to increase motivation in students by improving the facilities of dormitories and providing counseling for students.

Conclusion

According to the results of the present study, no significant relationship was observed between the academic motivation of students and variables of age, gender, marital status, quota and field of study. However, a significant association was found between academic motivation and achievement in basic sciences course and housing status of students since living in dormitories reduced academic motivation in students. Given the fact that academic motivation and achievement are multifactorial and can be affected by various individual, environmental or cognitive/non-cognitive factors, it is recommended that further evaluations be carried out to assess the role of factors such as educational setting, the interaction between professors and students, and academic satisfaction in this regard.

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