



Research Article

ISSN : 2277-3657  
CODEN(USA) : IJPRPM

## ***The Attunement between Competition-Cooperation Spirit and Academic Progress Motivation of students in Jahrom University of medical sciences***

***Mehran Farzaneh<sup>1</sup>, Ali Abbasjahromi<sup>2</sup>, Hossein Kargarjahromi<sup>3\*</sup>, Vahid Zarean<sup>1</sup>, Ayda Bahman Jahromi<sup>1</sup>, Hamid Reza Dowlatkah<sup>4</sup>***

<sup>1</sup>Research Committee student, Jahrom University of Medical Sciences, Jahrom, Iran

<sup>2</sup>MSc in Critical Care Nursing, Anesthesiology and Intensive Care Department, School of Nursing and Paramedical Sciences, Jahrom University of Medical Sciences, Jahrom, Iran

<sup>3</sup>Research Center for Noncommunicable Diseases, Jahrom University of Medical Sciences, Jahrom, Iran

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### ABSTRACT

**Introduction and Aims:** The progress motivation has been identified as an important factor in medical science because it helps students obtain the educational objectives, which is in fact a proper professional performance. So this article aimed to study the attunement between competition-cooperation spirit and academic progress motivation.

**Materials and Methods:** In this cross-sectional study, 215 students of Jahrom University of medical sciences were selected through stratified sampling method in 2015 academic year. Participants completed Cooperative/Competitive Strategy Scale (CCSS) questionnaire and Valrand Academic Motivation Scale (AMS) questionnaire. The data were analyzed using SPSS ANOVA, independent t-test, Pearson Correlation, and multiple regressions.

**Results:** Out of 215 students, 71.2% were female and 28.8% were male, 87.9% were single and 12.1% were married. The mean age was  $20.828 \pm 1.760$ , mean of academic progress motivation in male population was  $136.226 \pm 19.746$  and in female was  $124.961 \pm 19.004$ , mean of competition-cooperation spirit in male population was  $69.032 \pm 9.100$  and in female was  $68.137 \pm 10.698$  which had no significant relationship with sex, age, marital status and field of study. Coefficient of determination ( $R^2 = 0.003$ ) indicates that only 0.3% of the variation of competition-cooperation spirit influenced by independent variable of academic progress motivation and the model is not significant ( $p\text{-value} > 0.05$ ).

**Conclusion:** 80.5% of students have a very good level of academic motivation. Overall, results showed that academic progress motivation had no significant relationship in explaining competition-cooperation spirit. Further studies in graduate sections are recommended to evaluate the effect of marital status and age on academic motivation and competition-cooperation spirit.

**Keywords:** competition-cooperation spirit, academic progress motivation, medical students

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### INTRODUCTION

Processes that strengthen and guide behaviors are caused by individual and environmental forces. Motivation is also an internal process that strengthens and guides behavior. Therefore, motivation is a general term to determine common grounds among needs, knowledge, and emotions(1). Motivation, in fact, influences how to spend time and energy and people's insistence to perform tasks(2, 3).

Experts divide motivation into two main types: Intrinsic and Extrinsic. Intrinsic motivation refers to behavior that is driven by internal rewards, while individuals, influenced by extrinsic motivation, independently start an activity(4).

Psychologists have pointed out to the necessity of motivation in education due to its positive effect on learning, skills, approaches, and behaviors(5). Academic progress motivation is one of the initial structures for determining the motivation(6). In other words, the achievement motivation indicates one's tendency and interest to perform activities, set productive work environment, overcome problems, increase the amount of work, and compete for better selection through efforts. On the other hand, motivation is the tendency and desire to obtain better and more efficient performance(7).

Strengthening the sense of collaboration and participation is another objective of education. The experience shows that the sense of competition not only does not prepare the ground for the fulfillment of such goals but also blocks them. If the competition is carried out in the form of comparison, negative consequences are expected including undermined emotional relations among learners, the change of friendship into enmity and jealousy, and undermined spirit of collaboration and participation(8).

Academic progress motivation is of great importance among college students. Students are motivated to graduate, achieve to a certain level of competency in their jobs, and succeed in learning and education(9).

Toner and Patrick (2004) studied the effect of motivational factors among students on class learning activities. They concluded that the participation in class learning activities depends on motivational factors created by teachers(10). Wakub (2005) showed that participatory teaching method and feedback to students can increase the motivation and involvement of learners for learning activities(11). Long et al. (2007) claimed that motivational variables can be effective in students' academic success. Individuals with motivational variables such as self-confidence and interest were more successful(12). The study by Randy et al. (2015) on high school students showed that unfavorable class atmosphere was negatively associated with the students' academic motivation in mathematics even by controlling intervening factor of gender(13).

The progress motivation has been identified as an important factor in medical science because it helps students obtain the educational objectives, which is in fact a proper professional performance. The importance of medical professions has highlighted the role of motivation for progress because of the nature of them for providing the public health(14-16). Lower levels of motivation and motivational deficiencies cause pessimism, anxiety, and depression, on the one hand, and poor academic performance in medical students(17).

on the other hand. Studies in the West have widely investigated the academic motivation. It has also been studied in Iran more or less. Yet, few researchers have taken the role of motivation in academic achievement into account in medical and paramedical science. Considering the important role of doctors and paramedics in providing and promoting the health and the gap in this field, this article aimed to study the relationship between the academic motivation and competition-cooperation spirit of students in Jahrom University of Medical Sciences.

### **Materials and Methods**

This is a cross-sectional study. A total of 215 students (medicine, nursing, operating room, anesthesia, public health, lab science) of Jahrom University of Medical Sciences were enrolled as the sample in 2015 using stratified sampling. Students with the history of chronic disease, severe physical disabilities, psychological disorders, and psychological medicine intake were excluded.

After the confirmation of the research by Ethics Committee (IR.JUMS.REC.1394.027), the questionnaires were forwarded to the students. The information of participants were codified and confidentially studied. Data were collected using two questionnaires: Cooperative/Competitive Strategy Scale (CCSS) and Valrand Academic Motivation Scale (AMS).

Concerning CCSS, the items are related to the spirit of cooperation and competition devised by Harry J. Martin and translated by Hazeh Ganji (Ph.D.)(18, 19). The questionnaire has 28 items. The items are scored on a 5-option Likert scale (1=Completely Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Completely Agree). Notably, inverse

scoring method is used for items 5, 7, 16, 21, 22, 26, 27, and 28. Then, the cooperation-competition spirit scores were classified as follows:

**The comparison of the results with others (norms)**

Results		Percentage	
Men	Women		
83	80	15	Very Low
76	72	30	Low
68	63	50	Medium
60	54	70	High
53	46	85	Very High

AMS was first devised in France. It was formerly known as EME. This 28-item scale is based on self-determining theory. The questionnaire consists of three areas: Intrinsic Motivation (12 items: Questions 2, 9, 16, 23, 6, 13, 20, 27, 4, 11, 18, and 25), Extrinsic Motivation (12 items: Questions 3, 10, 17, 24, 7, 14, 21, 28, 1, 8, 15, and 22), and Amotivation (4 items: Questions 5, 12, 19, and 26). The items are scored on a 0 to 7 scale (1=Never, 2=Very Low, 3=Low, 4=Medium, 5=High, 6=Very High, and 7=completely). Then, academic motivation is classified according to the scores. The scores between 28 and 70 show Poor Academic Motivation, 70-120 shows Medium Academic Motivation, and greater than 112 shows Very Good Academic Motivation. Studies by Robert Valrand et al. on Canadian high school and college students showed that the reliability and validity of the English version of AMS were verified(20-22).

The validity of both questionnaires was approved by 5 persons of researchers and specialists. Also the 30-person pilot study was conducted to verify the reliability of the questionnaires. Using Cronbach alpha coefficient for Academic motivation questionnaire Valrand ( $r=0.718$ ) and scale of competition-cooperation spirit ( $r=0.830$ ) was approved.

The study by Veisani et al. (2012) reported the Cronbach's alpha of 0.84, 0.86, and 0.67 for Intrinsic Motivation, Extrinsic Motivation, and Amotivation, respectively(23).

College students filled in the questionnaire with the help of researcher helper. The helper forwarded the questionnaires to the students. The data were analyzed using the descriptive statistics such as percentage, mean standard deviation, and Pearson Correlation, independent t-test, ANOVA, and multiple regressions using SPSS.

**Findings**

Out of 215 students, 153 were female (71.2%) and 62 were male (28.8%). Concerning the marital status, 189 (87.9%) participants were single and 26 (12.1%) were married. The majors of students were as follows: 38 (17.7%), nursing; 36 (16.7%), anesthesiology; 35 (16.3%), operating room; 34 (15.8%), general health; 36 (16.7%) lab science, and 36 (16.7%), medicine. The mean age was  $20.828 \pm 1.760$ . The oldest and youngest students were 29 and 18, respectively.

Table 1 shows the mean scores of AMS and cooperation-competition spirit according to gender and marital status. Intrinsic Motivation ( $P<0.001$ ), Extrinsic Motivation ( $P<0.002$ ), Amotivation ( $P=0.005$ ), and, in general, Academic Motivation ( $P<0.001$ ) had a significant relationship with gender. The mean scores were greater in male than in female students. Since gender had a significant relationship with academic motivation, male students were motivated more than female. The mean scores of amotivation were lower in male than in female students. Cooperation-Competition Spirit had no significant relationship with gender according to t-Test ( $P=0.563$ ), meaning that gender had no effect on Cooperation-Competition Spirit.

Neither types of academic motivation had a significant relationship with Cooperation-Competition Spirit according to ANOVA ( $P>0.05$ ), meaning that marital status was not effective in academic motivation and cooperation-

competition spirit. According to table 2, all types of academic motivation and cooperation-competition spirit had no significant relationship with the course of study ( $P>0.05$ ).

Table 3 shows the correlation of Intrinsic Motivation, Extrinsic Motivation, and Amotivation scores with the scores of the Cooperation-Competition Spirit. No level of academic motivation had a direct, significant relationship with the Cooperation-Competition Spirit. In other words, academic motivation was ineffective in students' Cooperation-Competition Spirit. The overall score of academic motivation ( $r=0.055$ ) had no significant relationship with the Cooperation-Competition Spirit ( $P=0.426$ ) (Table 4).

Age had no significant relationship with Intrinsic Motivation scores ( $P=0.977$  and  $r=-0.002$ ). Extrinsic Motivation had no significant relationship with age ( $P=0.493$  and  $r=-0.047$ ). Amotivation had no significant relationship with age ( $P=0.618$  and  $r=-0.034$ ). Cooperation-Competition Spirit had no significant relationship with age ( $P=0.158$  and  $r=-0.097$ ).

Table 5 shows that Coefficient of determination ( $R^2= 0.003$ ) indicates that only 0.3% of the variation of competition-cooperation spirit influenced by independent variable of academic progress motivation and the model is not significant ( $p\text{-value}>0.05$ ). This result indicates that the academic motivation does not affect the competition-cooperation spirit.

Finally, 42 students (19.5%) had medium level of academic motivation and 173 (80.5%) had very good academic motivation.

### Discussion

Our article shows interesting results concerning the attunement between competition-cooperation spirit and academic motivation. Our study proved stronger results compared to similar ones because the students were equally selected among different courses of studies in order to show the effect of course of study on academic motivation and competition-cooperation spirit. The attunement of age with academic motivation and competition-cooperation spirit was another strong point of our study. The study showed the relationship between age, as an important factor in academic motivation, and competition-cooperation spirit.

The overall score of academic motivation showed very good motivation. Kavous Pour (2015), Nouhi (2012), and Kamariah (2010) also reported great motivation(14, 24, 25), which is consistent with the results of our study. Other studies, however, reported medium(26), medium to high(9, 27), and low motivation(28).

The study on Saudi Arabian medical students showed that lower stress and expectations cause happiness and motivation(29). The study on Malaysian undergraduate students using Pintrich model showed that although self-sufficiency had a positive relationship with academic success, this self-sufficiency can be caused by motivation. Therefore, it is related to the academic success which is consistent with the results of our study. There are, however, some differences concerning the major(30).

Our study showed that academic motivation had a significant relationship with gender. Our findings indicated that male students had a greater motivation than female. This is consistent with those of Yusefi et al. (2013) as gender and academic motivation were significant(31). Past studies highlighted the role of male in the relationship between academic motivation, career success, and, accordingly, academic success(32). Another study also showed that male students had greater progress motivation than female ones(9), which is consistent with those of our study caused by responsibility of boys in future and therefore more efforts for success. On the other hand, the results of recent studies in Iran indicated had slight and insignificant gender differences in this regard(33). The study by Sa'di Pour et al. (2014) showed that progress motivation had no significant difference between male and female students(34). The study by Norouzi et al. (2015) showed that academic motivation was not significant among male and female students(35). The results of the study by Shirdel et al. (2013) showed that academic progress motivation had no significant relationship between male and female students(36). Another study on high school students showed that progress motivation and academic success were not influenced by gender(32).

The results of our study showed that competition-cooperation spirit had no significant relationship with gender. The mean scores of competition-cooperation spirit were greater in male students than female ones. The study by Yusefi et al. on the comparison between male and female students concerning the mean scores of academic motivation showed that male students had a greater motivation for efforts and competition(9), which is consistent with the results of our study. The results are associated with potential future responsibilities such as housing, life management, and family supervision, or desire for better career opportunities.

In their book *Cooperation and Competition*, David Johnson and Roger Johnson point out to almost 500 studies concerning the participatory learning. They concluded that participatory learning, as an effective approach in teaching, prepares the ground for emotional growth and academic success(37). The study by Vittoria et al. showed that participatory learning dramatically increases the students' academic success(38). Our findings showed that courses of study had no significant relationship with the academic progress motivation. The mean scores of academic motivation in nursing students, however, were greater than those of other courses which are consistent with the results of the study by Mohammadi et al. (2015). They stated that nursing students had greater level of motivation for progress(39).

The motivation for progress is of great importance in nurses. This can justify greater motivation in nursing students. This is justified with the facts that most nursing students have selected nursing with the aim of help; the motivation plays a key role in nursing, which is associated with individual and public health; and the desire for studying in postgraduate and success(40, 41).

Mola Zadeh et al. (2014) stated that course of study had a significant relationship with academic motivation. Medicine and health students got the highest scores(42). The results of other studies are consistent with ours(43, 44).

Our findings also showed that marital status and age had no significant relationship with academic motivation and competition-cooperation spirit, which is consistent with the result of the study by Mola Zadeh et al.(42). The results are, however, inconsistent with the study by Lancia et al. (2013)(45), associated with limited age groups under consideration.

The study by Lancia et al. showed that academic progress motivation had no significant relationship with the competition-cooperation spirit. The study by Yusefi et al. (2009) showed that competition elements had a significant relationship with academic motivation(9). This is inconsistent with the results of studies which focused on great and significant relationship between competition and academic progress motivation(46-48).

Smith and others (2010) believed that problem solving-based participatory learning increased the involvement of students in problem-solving process and the use of group knowledge for academic prgress(49).

Since academic progress of medical students is associated with the public health promotion, identifying factors affecting it is of great importance. Motivation is recommended to be taken into account in medical education planning. It is also recommended to compare the students at different levels with their peers in future studies. The consideration of postgraduate students can provide dramatic results in order to study the relationship of marital status and age with mental health and academic motivation. Therefore, accurate planning is recommended in medical science education as well as measures for improving the health of students as important factors affecting the academic success and motivation.

#### **Acknowledgment**

This paper is the result of a research project entitled “The Attunement between Competition-Cooperation Spirit and Academic Progress Motivation of students in Jahrom University of medical sciences in 2015” which was adopted in Student Research Committee and has been approved with the Code IR.JUMS.REC.1394.027 in the Ethics Committee of Jahrom University of Medical Sciences in 2015. Hereby, we thank Deputy of research and technology of Jahrom University of Medical Sciences for its intimate partnership in order to carry out this research.

## Conflict of interest

The authors have declared no conflicts of interest

**Table 1:** Mean and Standard Deviation of Progress Motivation and Competition-Cooperation Spirit according to Gender and Marital Status

	Gender			Marital Status		
	female	Male	*P Value	Single	Married	*P Value
	Mean ± SD	Mean ± SD		Mean ± SD	Mean ± SD	
Intrinsic Motivation	54.255±11.875	62.435±12.409	0.000	56.630±12.581	56.500±12.681	0.961
Extrinsic Motivation	59.608±11.348	64.968±10.560	0.002	61.238±11.556	60.538±10.057	0.769
Amotivation	11.098±5.363	8.823±5.309	0.005	10.545±5.560	9.692±4.434	0.454
Academic Motivation	124.961±19.004	136.226±19.746	0.000	128.413±19.960	126.730±19.305	0.686
Competition-Cooperation Spirit	68.137±10.698	69.032±9.100	0.563	68.772±10.156	65.654±10.714	0.146

\*T-Test

**Table 2:** Mean and Standard Deviation of Progress Motivation and Competition-Cooperation Spirit according to Course of Study

	Course of Study						*P Value
	Nursing	Anesthesiology	Operating Room	Public Health	Lab Science	Medicine	
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	
Intrinsic Motivation	58.342±11.329	55.778±12.699	58.514±12.844	55.441±10.813	52.028±13.851	59.472±12.918	.123
Extrinsic Motivation	63.447±12.324	62.250±11.147	61.343±13.541	59.765±10.734	59.750±11.028	60.167±9.207	.670
Amotivation	10.000±4.986	10.389±5.763	11.029±6.162	9.912±4.260	11.444±5.369	9.889±6.004	.768
Academic Motivation	131.789±19.374	128.417±18.132	130.886±21.845	125.118±19.219	123.222±19.974	129.528±20.343	.402
Competition-Cooperation Spirit	67.947±13.543	67.778±8.205	70.286±9.806	67.235±7.820	67.528±11.877	69.611±9.015	.766

\*ANOVA

**Table 3:** Pearson Correlation for the relationship between different levels of Academic Progress and Competition-Cooperation Spirit

Statistical Indicator	Competition-Cooperation	
	Correlation	Sig. Level (P)
Intrinsic Motivation	0.039	0.572
Extrinsic Motivation	0.020	0.773
Amotivation	0.068	0.318

**Table 4:** Pearson Correlation for the relationship between the Overall Score of Academic Motivation and Competition-Cooperation Spirit

Statistical Indicator	Competition-Cooperation	
	Correlation	Sig. Level (P)
Academic Motivation	0.055	0.426

**Table 5:** Coefficients of the regression analysis for the relationship between Academic Motivation and competition-cooperation spirit

Independence Variable	R	R <sup>2</sup>	B	S.E	$\beta$	T	p-value
Constant	0.055	0.003	64.781	4.584		14.131	<0.001
Academic Motivation			0.028	0.035	0.055	0.798	0.426

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