

Motivation and academic achievement in medical students

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ABSTRACT

Background: Despite their ascribed intellectual ability and achieved academic pursuits, medical students' academic achievement is influenced by motivation. This study is an endeavor to examine the role of motivation in the academic achievement of medical students.

Materials and Methods: In this cross-sectional correlational study, out of the total 422 medical students, from 4th to final year during the academic year 2007–2008, at School of Medicine, Isfahan University of Medical Sciences, 344 participated in completion of the Inventory of School Motivation (ISM), comprising 43 items and measuring eight aspects of motivation. The gold standard for academic achievement was their average academic marks at pre-clinical and clinical levels. Data were computer analyzed by running a couple of descriptive and analytical tests including Pearson Correlation and Student's *t*-student. **Results:** Higher motivation scores in areas of competition, effort, social concern, and task were accompanied by higher average marks at pre-clinical as well as clinical levels. However, the latter ones showed greater motivation for social power as compared to the former group. Task and competition motivation for boys was higher than for girls. **Conclusion:** In view of our observations, students' academic achievement requires coordination and interaction between different aspects of motivation.

Key words: Academic achievement, medical students, motivation

INTRODUCTION

Motivation is an innate feature affected by four factors, namely situation (surroundings and the external stimuli), mood (the organism's internal state of mind and emotion), goal (behavioral goal, purpose, tendency), and tool (for goal achievement). Humans acquire the necessary motivation for the fulfillment of their goals, needs, or instinct. As for university students, academic achievement is of special importance.

Equipped with motivation, individual students are activated enough to complete an assignment successfully, achieve a goal, or accomplish some extent of mastery in their field, and thus are enabled to learn attain fruitfully and academic success.^[1]

Thus, motivation could be said to account for human behavior and explain why a particular behavior is demonstrated. Motivated behavior is one with energy, and is purposeful and ongoing.^[2]

In educational view, motivation is a multifaceted structure related to learning and academic achievement.

Literature on motivation abounds with various interpretations of the term. Educational motivation is viewed as a three-dimensional concept comprising the individual's set of beliefs about his abilities, intention, and the relevant emotional response needed to display some particular activity.^[3] Experts believe motivation is of two types: intrinsic and extrinsic motivation. Intrinsic motivation creates appeal for a person to act or react in a certain way, while extrinsic motivation accrues as a result of influence from outside sources driving

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a person to act purposefully.^[11] Psychologists have emphasized the significance of motivation in learning new skills, strategies, and behavior,^[4] and have proposed academic achievement motivation as one of the main factors necessary for reaching a more accurate definition for motivation. Academic achievement motivation refers to behavior resulting in learning and (academic) achievement.^[5]

In other words, academic achievement motivation is the learner's tendency to act in a certain way and evaluate his own performance spontaneously.

Behavior reflecting academic motivation mostly includes insisting on doing difficult assignments, working hard or making all the efforts to learn, and picking demanding assignments.^[6] Therefore, academic achievement motivation, or the so-called intrinsic motivation, is a psychological state which accrues when an individual assures himself that he enjoys enough competence and autonomy to learn a particular subject.^[6]

Owing to the effect of academic achievement motivation on students' success, in recent decades, psychologists have attempted to investigate and identify the factors involved. Findings have shown factors pertaining to personality, family, place of study, and society are influential.^[5] As an example, one study showed that personality factors in general and self-esteem and academic achievement motivation in particular affected learning and academic achievement significantly.^[7] Others have attempted to work on the integration of learning style, personality trait, intellectual capability, and academic achievement as prognostic factors for academic achievement.^[8] One study has reported that the most important motivation factors for medical students in choosing their field of study have been personality factors such as social status.^[8] In Pennsylvania School of Medicine, 90% of the students reportedly were satisfied with the educational programs and expressed their willingness to work in academic research centers after their graduation.^[9] In another study, dentistry students of different genders have mentioned different reasons for the selection of their field of study.^[10] In another study, for instance, male dentistry students were reported to be motivated by income more than females, while the former were more motivated by their family advice.^[11] On the other hand, researchers believe that low self-esteem, low educational quality, low family income, faint hope for future, and married life are the factors which diminish academic motivation.^[12] Also, motivation loss causes pessimism, anxiety, and depression which, in turn, cause lower academic performance.^[13] In accordance with these findings, researchers believe that in order to develop motivation, learning is necessary to occur in an appropriate atmosphere, with the desired facility, and relevant to the learner's needs.^[14]

Studies conducted in western countries have widely investigated academic motivation. In Iran, the issue has been studied to some extent; however, little research has been done on academic motivation in the fields of medicine. Considering physician's role in health promotion and regarding the current research vacuum, this study investigated the relationship

between academic motivation and academic achievement in medical students in clinical courses. The study in particular focused on academic motivation dimensions such as task, effort, complication, social power, affiliation, social concern, praise, and token.

MATERIALS AND METHODS

In this cross-sectional correlation study, 422 medical students (from 4th to final year) taking clinical courses in School of Medicine of Isfahan University of Medical Sciences completed the Inventory of School Motivation (ISM) proposed by McInerney and Ali.^[15] ISM consists of 43 questions in Likert 5-point scale. For each question item, there are five choices ranging from strongly disagree to strongly agree (rated 1–5). The inventory investigates eight dimensions, namely task (four items), effort (seven items), competition (six items), social power (six items), affiliation (three items), social concern (five items), praise (five items), and token (seven items).

The responses were coded such that higher scores represented higher motivation. For instance, considering competition, a student who had chosen strong agreement (rated 5) for all the six questions was considered to be highly motivated for competition.

The reliability of the tool has been calculated by a number of researches^[16-20] and Cronbach's α estimates vary from 0.67 to 0.82 (mean = 0.76).^[16]

In our study, Cronbach's α turned out to be 0.93 when the tool was administered to 60 students.

Mentioning the confidentiality of the participant's personal information, students' average scores for the first 3 years of their studies (a period of taking basic science courses) and their average scores for the second 3 years of their studies (a period of studying clinical courses) were used as the criteria for academic achievement.

Only 4th year students (studying clinical courses) were included in the study. Both group and individual administration of the questionnaire were applied by the researcher in educational health care affiliated with Isfahan University of Medical sciences.

Students unwilling to participate and the incomplete questionnaires were excluded from the study (16.1%). Data were analyzed using descriptive statistics indexes such as mean, standard deviation, and frequency percentile. Analytical tests including Pearson correlation coefficient and independent *t*-test were also applied.

In order to investigate the relationship between the components of academic achievement motivation and the two average scores, we used Pearson correlation coefficient. To compare the components in terms of gender, independent *t*-test was also applied. $P < 0.05$ was decided to be significant.

RESULTS

Response rate was 83.9% (344 students) and most of the samples (63.4%) were females. Mean age was 24 ± 1.67 years and most samples had an age ranging from 21 to 25 years.

Mean of the first 3-year average scores was 15.51 ± 1.29 and mean of the second 3-year average scores was 15.81 ± 1.10 . Also, the mean and standard deviation for the eight components of academic motivation were as follows: task (4.25 ± 0.52), effort (3.77 ± 0.67), competition (3.35 ± 0.82), social power (3.16 ± 0.85), affiliation (3.61 ± 0.91), social concern (3.88 ± 0.56), praise (3.87 ± 0.70), token (3.28 ± 0.87), and motivation as a whole (3.64 ± 0.48).

Statistical analysis indicated that there was a direct significant relationship/correlation between total academic motivation and average scores on basic sciences ($r = 0.152$ and $P = 0.005$) and average scores on clinical courses ($r = 0.160$ and $P = 0.003$).

Statistical analysis of the components showed a difference between girls ($n = 218$, mean of $SD = 3.70 \pm 0.70$) and boys ($n = 126$, mean of $SD = 3.88 \pm 0.61$) regarding the second component, namely effort ($t = 2.379$ and $P = 0.018$). There was also a difference between girls (mean of $SD = 3.25 \pm 0.8$) and boys (mean of $SD = 3.52 \pm 0.84$) regarding competition ($t = 2.94$ and $P = 0.004$).

DISCUSSION

Given the importance of academic motivation for academic achievement, the present study, trying to fill the current research gap, was designed to reveal the possible relationship between academic motivation and achievement.

Thus, the ISM was administered to all medical students from 4th to last year of Isfahan University of Medical Sciences. Students' average scores after finishing all basic courses and also their average scores in clinical courses were considered the criteria for academic achievement.

High total motivation scores reflected the students' quite high motivation and the task component appeared to gain the highest of the scores.

The finding is in accordance with those of other studies.^[15,20] There was also a relationship between motivation components and academic achievement, which was, to some extent, in accordance with other studies indicating a significant relationship between academic achievement and respect, power, praise, ability, competition, social status, goals, interest in education, and satisfying others.^[13,19,20] In our study, the low relationship between motivation components and academic achievement could be attributed to the students' inaccurate reports of their average scores or the inaccuracy of the scores themselves. High scores on task component could be the result of the students' greater involvement in cognitive processes and employing

more cognitive strategies and supervisions which lead to higher academic achievements. In addition, a genuine belief that the learning content in valuable *per se* affects self-regulation and self-efficiency positively.

Provided that competition component, which showed to have a high correlation with the total average scores and basic sciences average scores, results in students' more knowledge ability and expertise, it deserves admiration.

However, if this motivation is merely for gaining a high score and outperforming others, this should be taken as an alarm by both the educational authorities and the whole society. As members of health teams, medical doctors need to be skilful enough to play their role in the team; the study also showed male students had a higher motivation regarding competition and effort components.

This could be accounted for by boys' future responsibilities such as housing provision, life management, family supervision, or job achievements.

Since the research was conducted on medical students studying clinical courses, generalization of the findings for other academic levels or courses should be done with care.

CONCLUSION

Motivational factors affect academic achievement significantly and since medical students' success is closely tied to public health, it is suggested that more attention be paid to motivation components by the authorities.

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