



RESEARCH ARTICLE

## Correlation of study habits with academic achievement among students attending the national medical science olympiad

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### Abstract

**Introduction:** Study habit is a significant factor associated with academic achievement. The study style of students can influence their learning level. This study was conducted to find out the relationship between study habits and academic achievement among the students participating in the fifth national medical science Olympiad at Kerman University of Medical Sciences in 2013.

**Materials and Methodss:** This descriptive cross-sectional study was carried out on the students who attended the fifth medical science Olympiad at Kerman University of Medical Sciences in 2013. The sample size comprised of all the study population, selected through census sampling. A total of 278 students participated in the study and completed the questionnaire. Palsane and Sharma Study Habits Inventory (PSSHI) was used to collect the data. Date were analyzed by t-test, ANOVA and Pearsons' correlation coefficient.

**Results:** The mean age of students was  $24.94 \pm 2.36$ . 40.3% of participants were male and 59.7% were female. 65.5% were medical students, 28.4% were students of paramedical sciences, 2.2% were management students, 3.6% were pharmacy students and 1% dentistry students. The scores of study habit domains included: time division (7 out of 10), physical conditions (2.07 out of 12), reading ability (9.61 out of 16), note taking (3.97 out of 6), learning incentive (8.55 out of 12), memory (4.42 out of 8), exams (11.83 out of 20), health (3.65 out of 6) and total score (56.13 out of 90). The results of independent t-test showed no significant correlation between academic achievement and the scores of study habit domains and total mean score of study habits in both males and females ( $P=0.47$ ).

**Conclusion:** The study results indicated no difference between different study habits and styles among students. However, the study factor greatly affected the achievement level of all the students who used electronic resources.

**Key words:** study habit, academic achievement, medical science Olympiad.

### Introduction

Study and research have always been with human beings. In fact, from the beginning of creation, humans have started their life with study, investigation and research in accordance with the given period [1]. The main mission of university is training an expert human resource for the society, developing and promoting knowledge, expanding research and providing an appropriate ground for the development of the country [2].

The factors involved in academic achievement include interest, transparent objective, effort and perseverance, planning, and psychological and environmental conditions. One of these important factors is study habit and style, and bad study habit is a major element associated with academic failure [1]. Researchers have defined study skill as a method for encoding, saving, maintaining, recounting and using information logically, effectively and sufficiently [2, 3]. In

addition to intelligence, motivation, affective characteristics and quality of education, study skills play a pivotal role in the success of a person; therefore, it is necessary to learn these skills to enhance one's study efficiency [4].

Study skills are planned purposive study tools that prevent students' irregularities. Study skills are influenced by the learner's motivation and affect the learner's complete and proper use of time [9]. Making students familiar with study is an essential issue that promotes their analytic ability [4]. The study conditions are those whose provision and application can contribute to a more efficient study [2]. Along with increasing advances in knowledge, the scientific materials have been remarkably developed. Therefore, academic achievement is the result of efficient attempts, time management and a systematic curriculum. A major factor involved in the students' failure is lack of study skills [3]. Academic achievement of students at university requires

study plan, reliable resources, regular effort and proper study habits and styles. Correct study methods and appropriate readiness for learning reduce the academic problems of students, including learning and test anxiety [12]. Given the lack of information about the status and study habits of students attending scientific Olympiads, the current study was aimed to determine the correlation of students' study habits with their academic achievement in order to identify and reduce their weaknesses and promote the academic knowledge of the medical graduates, who are concerned with the health of community.

## Methods

This descriptive cross-sectional study was carried out on the students participating in the fifth medical science Olympiad at Kerman University of Medical Sciences in 2013. The study sample consisted of all study population, selected through census sampling. About 400 questionnaires were distributed among the participants, from which 278 questionnaires were completed and included in the study. To collect data in this study, Palsane and Sharma Study Habits Inventory (PSSHI) was used. This inventory was designed by Van Stein, Palmer and Schultz in 1987 at Texas University, Austin by collecting and studying scientific resources, textbooks and articles published on study and learning strategies. They intended to make a questionnaire to measure the study and learning strategies of students. The questionnaire comprised of 45 items in 8 domains, including time division, physical conditions of study, reading ability, note taking, learning incentive, memory, exams and health, which were evaluated by Likert scale: score 2 for the responses "always or often" and scores 1 and 0 for responses "seldom or never". The maximum obtained score was 90, indicating good study habits. The academic achievement was determined according to gaining the top rank in Olympiad and grade point average (GPA) of each student.

## Results

The scores obtained for the domains of study habits included time division (7 out of 10), physical conditions (7.07 out of 12), reading ability (9.61 out of 16), note taking (3.97 out of 6), learning incentive (8.55 out of 12), memory (4.42 out of 8), exams (11.83 out of 20), health (3.65 out of 6) and total score (56.13 out of 90). Considering the maximum score of each domain, the participants in this study obtained a moderate score. The results of independent t-test indicated no significant difference between academic achievement and the scores of study habit domains as well as total score

of study habits in both males and females ( $P = 0.47$ ). The total mean score of study habits of general practitioners was  $55.95 \pm 9.99$  and that of the undergraduate students was  $75.81 \pm 8.55$ , indicating no significant difference between them ( $P = 0.20$ ). Further, no significant difference was found between the total mean score of study habits and study location ( $P = 0.44$ ); however, a significant difference was reported between the total mean score of study habits and study source ( $P = 0.000$ ). That is, the students who used electronic sources obtained a higher score in study habits. The findings also showed no significant difference between study style and total mean score of study habits ( $P = 0.08$ ). The total mean score of students' study habits increased as the students' academic level increased. The results of chi-square revealed no significant difference between gender and study location ( $P = 0.29$ ), study source ( $P = 0.13$ ) and study style ( $P = 0.39$ ) [Table 1].

**Table 1:** Frequency of students' study habits.

Habits	Often	Sometimes	Never
daily study	58.3	10.4	31.3
breaks between study	5	65.5	29.5
distraction	14	39.6	46.4
not taking during study	8.3	49.6	42.1
note taking in class	11.9	47.8	40.3
comparing the class notes with the book	20.1	40.6	39.2
study before the class	29.1	32	38.8
timely class attendance	6.1	71.2	22.7
regular sleep during exams	16.2	43.2	40.6
studying the notes before exams	8.6	48.2	43.2
a sense of mental pressure before exam	36.3	29.1	34.5
feeling of despair in the case of exam failure	52.5	19.1	28.4

From among 278 students attending the Olympiad, only 15 (5.4%) participants received an acceptable rating; 6 males and 9 females. The results of chi-square showed no significant correlation between gender and success in Olympiad. Also, the findings of independent t-test indicated no significant correlation between students' success in Olympiad and total score of study habits. Moreover, Pearson correlation coefficient revealed no significant association between the students' mean GPA of previous term and total mean score of study habit domains. There was a reverse and weak correlation between the students' mean GPA of previous term and total mean score of study habit domains. Generally, the results of this study showed no significant correlation between study habits and academic achievement

(success in Olympiad and GPA of previous term) [Table 2].

**Table 2:** Correlation coefficient between GPA and scores of study habit domains.

GPA Variable	Correlation coefficient (r)	p
Time division	-0.028	0.64
Physical conditions	-0.034	0.56
Reading ability	0.047	0.43
Note taking	-0.034	0.56
Learning incentive	-0.009	0.88
Memory	-0.070	0.24
Exams	-0.057	0.34
Health	-0.102	0.09
Total	-0.054	0.37

## Discussion

This study was performed to determine the relationship between study habits and academic achievement of the students taking part in medical science Olympiad. The findings showed an average mean score for the study habits and its related domains among the students. The study conducted by Koushan et al. on the students of Sabzevar University of Medical Sciences indicated an average level for the total mean score of study habits and its domains [2]. Also, Ferydooni Moghadam et al. showed that most of the students had relatively good or average study habits [23]. Thus, since the students' study habits are at a moderate level, it seems necessary for the development center of universities to seriously take this issue into account and find a solution for it in order to improve students' study habits and skills. It should be pointed out that the total mean score of study habits in this study was a little higher than those of other studies like Kushan, Ferydooni and Tarshizi, which might be due to the type of study population, i.e. the students attending the medical science Olympiad. Further, no significant difference was observed between two genders in terms of the total score of study habits and its related domains. However, in the study by Koushan, boys had a better status in reading ability and memory than the girls, but the girls were better in learning incentive [22]. Also, in the study carried out by Tarshizi et al, girls were better in note taking than the boys [19].

The mean score of time division domain was 7 out of 10, which indicated students obtained 70% of the score. In the study of Ravari et al, it was found out that managing the study time is one of the strategies that is suggested to reduce stress during studying at university [4]. Nourian et al. reported better study skills in terms of time management for males than females. In their study, the male students had a better performance than the female counterpart in time management while studying, concentration while studying and comprehension.

Physical condition is a major element of study habits. The mean score of physical conditions for study was 7.07 out of 12, indicating students gained 58.91% of the total score, i.e. about half of the students had a proper physical conditions for study. In this study, 52.5% of students did not have all required textbooks and study materials and most of them used written sources, especially handouts [6]. Also, Mardanian et al. reported the majority of students used textbook during the term and course handouts while approaching examinations [7].

Reading is one of the main study skills. The mean score of reading ability was 9.61 out of 16, which showed students obtained 60.06% of the total score, i.e. more than half of the students were good at reading. In this study, 56.1% of students read the main points before reading the chapter. In the study by Rabiei [9], it was proposed that pre-reading creates an information ground that provides a comprehensive reading. Pre-reading includes reading the preface, introduction of the book and contents in order to find out the organization, titles and main approaches of the book. Only 39.6% of students read the book carefully to comprehend all the points and 52.9% of them changed their reading speed according to the significance and forms of subject matter. Note taking in classroom is an important learning activity. Taking note from the book greatly contributes to studying. The mean score of note taking was 3.97 out of 6. It indicated students acquired 66.16% of the total score, that is over half of the students took note while studying. In the study performed by Muhammadi, 71.3% of students were aware of the importance of learning while studying and only 64.4% of them embarked on note taking [8]. The study of Nikzad showed that the best time for note taking is when the materials of one unit or chapter of the book are studied and minor and major points are marked [10].

Regardless of learning ability, tendency to learn is also a significant matter. The mean score of learning incentive was 8.55 out of 12, indicating that students obtained 71.25% of total score. On the other hand, the majority of students had sufficient incentive for learning while studying. Khadivzadeh et al. highlighted motivation as a major study strategy that can affect learning and selection of correct study methods. They reported that the students with more academic failures had less learning incentive and weaker study strategies. They generally showed a significant difference between the scores of motivation for the study participants and those of American students [11]. Wilkinson showed that study time is significantly correlated with motivation and deep study [13].

Memory improvement means better learning. The mean score of memory domain was 4.42 out of 8, showing the students gained 55.25% of total score, i.e. only half of respondents had a good memory for study. In the studies

carried out by Darvis [14] and Spiegel [16], it was reported that students who created an image of the learned materials in their mind were more successful in comprehending and remembering the materials than those who reviewed the materials and underlined the main points.

The mean score of exams was reported to be 11.83 out of 18, which showed students acquired 65.72% of total score. On the other hand, over half of the participants were ready for examination, had regular sleep during exams, read the questions once before responding, answered the questions in order and used the results of the exams to improve their conditions. The mean score of exam domain in this study was higher than those of Koushan and Freydooni Moghadam, possibly due to the type of study population. It can be concluded that the score of exam domain for Olympiad students is higher than that of university students.

The mean score of health was 3.65 out of 6, which showed that students obtained 65.72% of total score. That is, more than half of the respondents got help from students and stated they would use the guidelines if applied to their study habits. They also reported they would feel hopeless if the results of their exams were not good. The mean score of health in this study was higher than those of Kousahn and Freydooni Moghadam, which, as mentioned above, might be due to the type of study population. In this study, no significant correlation was found between the age and study habits of respondents, which is in contrast with the results of some studies. For example, referring to the study of Thomas and Roro, Safavi suggested that study skills like note taking would improve over time.

In general, the findings of this study showed that the study habits of Olympiad students were at average level; so, it can be argued that their study style did not enjoy a favorable quality. Since study skills play a vital role in the academic achievement and performance of students and academic performance definitely affects their future career and education, it is necessary to take their study habits and styles into consideration and take special measures to improve them. The researchers believe that study habits and skills are learnable and various steps can be taken in this regard. Hosini Shahidi et al. believed that including the study and learning strategies in education program regularly or mandating the students to attend educational workshops on application of these skills can be giant steps to take in this regard [18].

### Conclusion

The study habits of students in this study were reported to be at an average level. Although most of the students had a good GPA, but they were less successful in Olympiad.

Thus, it can be concluded that students' study habits did not play a major role in their GPA and success in this Olympiad. Moreover, study was very much effective in their success and students who used electronic sources were shown to be more successful. Since using electronic sources play a role in the students' success, it is suggested that students be provided with more access to these sources.

### Conflicts of Interest

There are no conflicts to declare.

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