

The Relation Of Personal And Academic Characteristics Of Medical Students Cohort Entered The Medical Faculty Of Kermanshah University In 2000 And Their Performance In The 28th Comprehensive Exam Of Basic Medical Sciences

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Abstract

Background and purpose: Considering the importance of comprehensive basic sciences exams in determining the academic level of medical students, this study was done to find the correlation between personal and academic characteristics of medical students entered the medical faculty of Kermanshah University in 1379 and the results of the 28th comprehensive basic medical sciences exam.

Methods: 38 medical students participated in this study. An information form which includes personal and academic characteristics of medical students and their scores in the comprehensive basic medical sciences exams was used to collect data. The data were analyzed using descriptive statistics (percent and average figures) and inferential statistics (variance analysis tests, t-test, Mann-Whitney and Kruskal-Wallis tests).

Results: 68.4% of the 38 medical students were male, 92.1% entered the university using target access schemes, 15.8% graduated from the high schools for gifted and talented students, 63.2% has no failed units, 67.4% were living in dormitories. The average score on their diploma was 18.49 ± 1.20 and the average of their total score in basic medical sciences stage was 14.89 ± 10.10

The correlation of the comprehensive basic medical sciences exams with the average score in 5th term or the average of total score in basic sciences stage was the most (0.8 and 0.79). there were no significant correlation between the scores in the comprehensive basic medical sciences exams and students' gender, place of living, target access schemes and graduation from schools for gifted and talented students.

Conclusion: this study showed that the average scores in different terms of basic medical science and the average of total scores in basic medical science stage are correlated with the scores in basic medical science stage.

Keywords: KERMANSHAH, COMPREHENSIVE BASIC MEDICAL SCIENCES EXAM, MEDICAL STUDENTS, PERSONAL CHARACTERISTICS, ACADEMIC CHARACTERISTICS.

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Introduction

Undergraduate medical education consists of four stages: basic sciences, physiopathology, clerkship and internship (1). Medical students have to pass

the comprehensive basic medical sciences exam after passing all basic medical sciences units. Students are required to pass this exam to enter physiopathology stage. The comprehensive basic medical sciences exam currently comprises basic medical sciences, ie Anatomy, Biochemistry, Health, Physiology, Pathology, Bacteriology, Histology, Parasitology, Immunology, English language, Embryology, Genetics, Medical physics, Nutrition, Psychology, Insectology, Fungology, Virology and Islamic insights (2). If after four times taking the exam a medical student can't pass it, he/she will have to change his/her major. The comprehensive basic medical sciences exam in form of multiple choice questions has been given twice (in February and September) yearly since 1989. Minimum pass score is 70% of the average of the highest 5% scores (3). The exam session is held simultaneously in all medical universities by basic sciences committee of ministry of health (4).

Students, one element of higher education system, have personal and demographic characteristics, which could be regarded as important confounding factors in their academic performances (5). Different factors are involved in medical student success in the comprehensive basic medical sciences exam. Studies have shown that students who failed or passed marginally in this exam will have difficulties passing the following stages. Many of the students who aren't able to accomplish their undergraduate medical education have failed this exam (3).

Every educational course will be helpful and efficient providing that an accurate evaluation is done to determine course success and the factors required to make changes appropriate for responding to new needs. (6). Studies of the results of the comprehensive medical sciences exams in some medical universities showed that a number of committed and hard-working students had failed the exams. So other factors besides students' hard-working should be involved in the results of the comprehensive basic medical sciences exams (3). Researches revealed various factors which might influence students' success in this exam (7,8,9,10) like age,

gender, marital status, living in a dormitory, duration of the basic medical sciences stage, interval between graduation from high school and being accepted in the medical universities, score in entrance exam of universities (3).

Considering the importance of the basic medical sciences stage and its essential role in medical students' success in the following educational stages, influences of different factors including personal and academic characteristics of medical students in the results of the comprehensive basic medical sciences exam, this study was undertaken to determine the correlation between personal and academic characteristics of medical students and their performance in the 28th comprehensive basic medical sciences exam in medical faculty of Kermanshah in 1382.

Methods

This study is a correlational one. Data about different variables such as age, gender, average score on diploma, average of total score in the basic medical sciences stage, score in the comprehensive basic medical sciences exam, numbers of failed units, targeted access schemes for different regions (1,2,3), witnesses and veterans graduation from high schools for gifted and talented students, living in dormitories, the year of graduation from high school and the year of birth for all medical students who entered medical faculty of Kermanshah in 1379 and seated the 28th comprehensive basic medical sciences exam (Esfand 81) were gathered from educational deputy of the medical faculty and recorded in the forms. After being entered in to the computers, the data were analyzed using SPSS (ver 11) program. Step by step multiple linear regression analysis was used to determine the relationship between different factors. Variance analysis and t-test were used to compare the average of scores of different age and gender groups; Man Vitni and Kroschal Wallis test were used for the same purpose in low size groups.

Results

38 medical students entered medical faculty of

Kermanshah in 1379 and seated the 28th comprehensive basic medical sciences exam. All of were single, 68.4% male, 92.1% from targeted access schemes for different regions (Mostly from region 2), 15.8% graduated from the high schools for gifted and talented students. None of them had a history of conditionally passing, 63.2% successfully passed all units, 15.8% had one failed unit, 13.2% had two failed units and 5.3% had three failed units. 47.4% of the students were living in dormitories. Most of the students, 73.9%, were born in year 1360,61. 55.3% of them were accepted in the university the same of ear of graduation from high school. The average score in 4th term was the minimum one (table 1)

Table 1. The average scores and its standard deviation of medical students who entered the Kermanshah Medical University in 2000

	Average	Standard deviation
Diploma	18.49	1.20
First term	15.98	1.1
Second term	14.85	1.26
Third term	15.16	1.26
Fourth term	14.21	1.48
Fifth term	14.65	1.26
Basic medical sciences stage	14.89	1.1

The average and standard deviation of the number of failed units was 0.71 ± 1.16 . these figures for the score in the comprehensive basic medical sciences exam was 132.57 ± 17.92 . the percent of correct responses to biology part of entrance examination of universities was 72.08 ± 12.6 . The average score in 5th term has the most correlation with the score in the comprehensive basic medical sciences exam (table 2). Step by step multiple linear regression analysis was used to provide an equation for calculation of predicted score in the comprehensive basic medical sciences exam. Three variables, ie the average score in 5th term, targeted access schemes to enter the universities and the average score in 3th term one after

another entered in to the equation and showed significant correlation with the score in the comprehensive basic medical sciences exam ($P < 0.001$). other variables, in the presence of these three factors, didn't show significant correlation with the score in the comprehensive basic medical sciences exam. The quotient of providing this equation was 76.2%, ie 23.8% of variance of the score is related to other variables which weren't stud died.

The score in the comprehensive basic medical sciences exam = 5.239 (average score in 3th term) + 6.53 (targeted access schemes figure) + 8.446 (average score in the 5th term) - 85.42 . The average score in the comprehensive basic medical sciences exam didn't show any significant correlation with gender, living in dormitories, target access schemes, graduation from the high schools for gifted and talented students, using t-test, variance analysis, Manvilni and Kroschal Wallis tests.

Conclusion

Result of this research showed that there are significant correlations between the score in the comprehensive basic medical sciences exam and two factors, the average score in different terms of basic medical sciences stage, specially the 5th, and the average of total scores in basic medical science stage. These findings approve of the results of other researches (3,9). Students' attempts during basic medical sciences stage undoubtedly are related to their success in the comprehensive basic medical sciences exam. The percent of correct answer to biology part of the entrance exam of universities and the score in the comprehensive basic medical sciences exam are significantly correlated. However Roodbari and Shariati showed that between the scores in entrance exam of universities and the comprehensive basic medical sciences exam no significant correlation exists (3). Their findings are justifiable by different reasons; in this study all 38 medical students who entered the faculty in 1379 and passed the comprehensive basic medical sciences exam. Hadn't any conditionally passed units and their

Table 2. Correlation quotient of different variables and the score in the 28th comprehensive basic medical sciences exam in medical faculty of Kermanshah

Variable	Correlation quotient	P value	Average	Standard deviation
The average score in 5 th term	0.89	0.001	14.65	1.2
The average of total scores in basic medical sciences stage	0.795	<0.001	14.89	1.1
The averages score in 3 th term	0.752	<0.001	15.16	1.2
The average score in 4 th term	0.748	<0.001	14.21	1.48
The average score in second term	0.61	<0.001	14.21	1.26
The year of birth	0.483	<0.002	-	-
The number of failed units	0.428	0.007	0.71	1.16
The average score in first term	0.391	0.017	15.98	1.10
The year of graduation from high school	0.39	0.015	-	-
The percent of correct responses in biology part of the entrance exam of the universities	0.339	0.037	72.08	12.92
The average score on diploma	0.08	<0.7	18.49	1.20
Targeted access schemes	-0.02	<0.9	-	-

score in biology part of the enhance exam was considered as the most influential factor in the score of the entrance examination of universities, while in the study of Roodbari and Shariati students, either failed or passed the units, who seated the comprehensive basic medical sciences exam were studied and the total score in the entrance exam of universities were used as a variable. More over, in this study (3) categorization was done according to the average scores and the k-2 test was used, despite the fact that there are other statistical test which are more suitable to study quantitative variables.

In this study these were no significant correlation between targeted access schemes and the score in the comprehensive basic medical sciences exam. The linear regression analysis showed that targeted access schemes is the second most important factor, following the average score in 5th term, of success in the comprehensive basic medical sciences exam. Other researches have approved of this finding (3,11,12). In this study there weren't any significant correlation between the average score on diploma and the score in the comprehensive basic medical sciences exam.

The research by Mashoof and his colleagues approved of this finding. (11). On the contrary the results of study by Khaksari and his colleagues showed a significant correlation between the average score on diploma and the score in the exam (9). These contrast findings might be resulted from a decrease in validity of the average score on diploma. As the centralized administration of the exams in the last year of high school recently changed to be decentralized and the average score on diploma isn't involved in the score on diploma is losing its validity to compare students with each other. This study showed no significant correlation between the score in the comprehensive basic medical sciences exam and factors such as gender, living in dormitories, and graduation form the high schools for gifted and talented students, while other researches have shown that female students' and local students results in the comprehensive basic medical sciences exam are better than male students and students living in dormitories respectively. (3). This could be resulted from the difference between the students participated in this study, who all had

no conditionally passed units and passed the comprehensive basic medical sciences exam, and the students in previous researches who had failed, conditionally passed or passed units and either passed or failed the comprehensive basic medical sciences exam.

In short, this research showed that the average scores in different terms of basic medical sciences stage, the average of total scores in this stage and the percent of correct answers in biology part of the entrance examination of universities are correlated with the score in the comprehensive basic medical sciences exam. However gender, living in dormitories and the type of high school are not correlated with the scores in this exam.

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