

## Factors Contributing to Educational Achievement and Success in Birjand University of Medical Sciences

Ghaderi R, MD<sup>1</sup>; Bijari P<sup>2</sup>

<sup>1</sup> Ghaderi R, Associate Professor, dermatology department, Birjand University of Medical Sciences and Health Services

<sup>2</sup> Bijari P, Medical Student, Birjand University of Medical sciences and Health services

### Abstract

**Background and purpose:** An understanding of the factors contributing to students success or causing failure help us find a solution to prevent waste of resources and contribute to develop a more effective educational system. This study is an attempt to find out the factors contributing to educational success in Birjand University of Medical Sciences and Health Services.

**Methods:** All students of Birjand University of Medical Sciences who studied in first semester 2003-2004 participated. A self-administered questionnaire was given to students who were present at their classes. The questionnaire included questions on age sex grade point average, parents' level of literary, parents' occupation satisfaction with their field of study, satisfaction with quality of instructions and educational activities provided, occupational prospect, and the rapport established between students and instructors. The students were divided into two groups based on GPA. The data were extracted and analyzed with SPSS4 software. Chi-square test, t-test, non-parametric Man-Whitney test, Fisher exact test, ANOVA, Pearson correlation coefficient were used to find out the significance of the results ( $p < 0.05$ ).

**Results:** Of all 390 students of Birjand University of Medical Sciences who participated, 9.2% had a GPA < 14 (failed) and 80.8% had a GPA  $\geq 14$  (succeeded); 79.3% were single, and 78.7% were from other cities. The mean GPA was  $15.8 \pm 1.6$ . Of all students with educational failure, 50.7% were male while 49.3% were female with no significant difference. Of all students with educational failure, 78.7% were single and 21.3% were married with no significant difference. No significant difference was observed for the fathers' literacy on students' educational failure while a comparison of students whose mothers were illiterate with students whose mothers had a general diploma ( $P = 0.04$ ) and with students whose mothers had an academic degree ( $P = 0.003$ ) showed a significant difference. There was a significant difference between students with GPA  $\geq 14$  and those with GPA < 14 on how they think of their educational prospect. Mean hours of study was 7.5 hours for students who failed (GPA < 14) and 10.3 hours for students who succeeded (GPA  $\geq 14$ ) with no significant difference.

**Conclusion:** As the students' success in medicine is an important goal in terms of all relevant resources spent to train physicians, and given the fact that many factors are involved we recommend that similar studies are carried out in other universities of medical sciences to help identify the factors contributing to students' success more vigorously.

**Key words:** EDUCATIONAL SUCCESS, EDUCATIONAL FAILURE

*Journal of Medical Education Winter and Spring 2007; 11 (1,2): 71-75*

**Corresponding author:** Dr Reza Ghaderi is a dermatologist working as associate professor in Birjand University of Medical Sciences, Vali-e-Asr hospital, Ghaffari Bldg, Birjand, Iran  
Tel: +98-561-4443001-9  
Phone: 989155612135  
E-mail: [rezaghader@yahoo.com](mailto:rezaghader@yahoo.com)

## Introduction

Learning is a change in human competencies which last for sometime and it cannot be attributed to growth and development processes (1). For effective learning to take place a talented learner is needed as well as a good plan for learning activities guiding and managing of learning, and provision of good instruction (2,3). Academic institute and universities have the duty of training the skilled and educated human resources who are the main stem of any development (4,5). The higher education system has always been facing the problem of students' failure which is a waste of scarce resources. Finding the factors contributing to this problem help us find a solution to prevent further waste of resources and contribute to develop a more effective educational system (6,7).

This study is an attempt to find out the factors contributing to educational success in Birjand University of Medical Sciences and Health services.

## Methods

In this survey all students of Birjand University of Medical Sciences and Health Services who studied in first semester 2003-2004 participated. A self-administered questionnaire was given to students who were present at their classes. Students were from all fields and programs including associate degree, bachelor's degree, and professional doctoral degree (Medicine). The questionnaire included questions on age sex grade point average, parents' level of literary, parents' occupation satisfaction with their field of study, satisfaction with quality of instructions and educational activities provided, occupational prospect, and the rapport established between students and instructors.

The students were divided into two groups: those with educational failure identified with a  $GPA < 14$ ; and those with educational success identified with a  $GPA \geq 14$ .

The data were extracted and analyzed with SPSS4 software. Chi-square test, t-test, non-parametric Man-Whitney test, Fisher exact

test, ANOVA, Pearson correlation coefficient were used to find out the significance of the results ( $p < 0.05$ ).

## Results

In this survey 399 students of Birjand University of Medical Sciences participated but 9 students did not return the questionnaire. Of all precipitants, 229 (57.4) were female. Regarding the degree program they studied, 36.1% studied for associate degree, 8.3% studied for bachelor's degree, and 45.6% studied for the doctoral degree; 79.3% were single, and 78.7% were from other cities.

Regarding parents' literacy, 55.6% of students' fathers had an academic degree while 24.9% had a high school diploma, and 2.3% were illiterate; 39.7% of students' mothers had an academic degree, while 31% had a high school diploma and 3.8% were illiterate.

Table 1 shows the frequency distribution of students' educational success or failure. The mean GPA was  $15.8 \pm 1.6$ . Of all students with educational failure, 50.7% were male while 49.3% were female with no significant difference.

**Table 1.** Frequency distribution of failed and succeeded students by sex

Sex Educational status	Sex		Total
	Male (%)	Female (%)	
Failed ( $GPA < 14$ )	3.8 (50.7)	37 (49.3)	75
Succeeded ( $GPA \geq 14$ )	128 (40.6)	187 (59.4)	315
<b>Total</b>	<b>166 (42.6)</b>	<b>224 (57.4)</b>	<b>390</b>

Of all students with educational failure, 78.7% were single and 21.3% were married with no significant difference. The mean GPA for singles was rather the same as that of married students

(15.8±1.6 vs 15.7±1.6, P=0.13).

Of all students with educational failure 17.3% were from Birjand while 82.7% were from other cities; the native students with educational failure were more likely to have higher GPA but the difference was not significant (P=0.3).

No significant difference was observed for the fathers' literacy on students' educational failure. More over, comparing GPA of students with different literacy levels of their fathers revealed no difference.

Although the level of mothers' literacy were not associated with students education failure, a comparison of students whose mother were illiterate with students with mothers having a general diploma (P=0.04) and with students whose mothers had an academic degree (P=0.003) showed a significant difference.

An ANOVA showed that students' educational performances were not the same (P<0.001) based on their fathers occupations (table 2). A Tukey test showed that students whose fathers were governments employee are different from those with fathers who worked as teachers (P=0.019). Students GPA were not different based on the students' mothers' occupation.

There was a significant difference between students with GPA $\geq$ 14 and those with GPA <14 on how they think of their educational prospect (table 3). A Tukey test also showed a significant

difference between mean GPA of students who were completely optimistic and mean GPA of those who were completely pessimistic about their future (P<0.05).

The students' satisfaction with the their field of study was not different between failed and succeeded students although a Tukey test showed that there was a significant difference between mean GPA of students who were very satisfied with their field of study and students who were very dissatisfied with their field of study (P=0.014). The students' satisfaction difference with mean GPA or educational status (failed or succeeded).

The rapport established between instructors and students showed no significant difference between students with different educational status.

An ANOVA test also showed that there was no significant difference between mean GPA of students who expressed the student – instructor rapport as “very high”, “high – to moderate”, “low”, and “very low”.

Mean hours of study was 7.5 hours for students who failed (GPA<14) and 10.3 hours for students who succeeded (GPA $\geq$ 14) but the difference was not significant.

Pearson's correlation coefficient for the association between GPA and hours of study per week was 0.32 (P<0.001).

**Table 2.** Frequency distribution of students' fathers occupation by educational status

<b>Fathers' Occupation</b>	<b>Educational failure (%)</b>	<b>Educational Success (%)</b>	<b>Total</b>
Government employee	6 (7.1)	79 (92.9)	85
Teacher	24 (23.8)	77 (76.2)	101
Retired	3 (13.6)	19 (86.4)	22
Private business	29 (24)	92 (76)	121
Military officer	9 (33.3)	18 (66.7)	27
Occupation requiring special degrees	4 (15.4)	22 (84.6)	26
Total	75 (19.6)	307 (80.4)	382

**Table 3.** Frequency distribution of students' educational status by educational prospect

<b>Educational status</b> <b>Educational prospect</b>	<b>Education al failure (%)</b>	<b>Educational Success (%)</b>	<b>Total</b>
Completely optimistic	2 (8)	23 (92)	25
optimistic	16 (16.2)	83 (83.8)	99
Neutral	38 (18.7)	165 (81.3)	203
Pessimistic	10 (22.2)	35 (77.8)	45
Completely Pessimistic	9 (50)	9 (50)	18
Total	75 (19.2)	315 (80.8)	390

## Discussion

In our study 19.2% of students had a GPA<14 (failed) and 80.8% had a GPA $\geq$ 14 (succeeded). Mean GPA was 15.6 for males and 15.9 for females which showed a significant difference ( $P<0.05$ ); A study in Shiraz University of Medical Sciences in 1992-3 suggested that sex can be a predictor factor for educational achievement (8). Of all students with educational failure, 87.7% were single and 21.3% were married, while a study by Zahedi-Asl and a study by Delavar showed that married students were more likely to have educational failure (9,10).

Our study showed that students from Birjand were more likely to have higher GPA. A study in Ardebil in 2001 also showed similar findings. (11) In our study the level of students' mothers' literacy were associated with students educational achievement while a study in Artesh University of Medical Sciences in 1998 and a study in Shiraz University of Medical Sciences in 1992-3 showed that the level of literacy of both parents were associated with students educational achievements as measured by GPA (7,8).

Our study showed students whose fathers were a government employee had higher GPA. The study in Artesh University of Medical Sciences suggested that parents occupation can be associated with students educational

achievement (7).

Our study showed that educational status of students (failed or succeeded) was associated with prospect of future for students. The study in Artesh University of Medical Sciences had similar results while the study in Ardebil University of Medical Sciences showed no association. (7, 11).

In our study, as well as the study in Ardebil University of Medical Sciences (11) the students satisfaction with their field of study had no effect on students educational status while another study on students studying agriculture suggested those more satisfied with their field of study tend to have better achievements (12).

As the students' success in medicine is an important goal in terms of all relevant resources spent to train physicians, and given the fact that the information available in this regard is not sufficient, we recommend that similar studies are carried out in other universities of medical sciences to help identify the factors contributing to students success more vigorously.

## References

1. Gagne RM. Conditions of learning and theory of instruction. London. UK: Thomson learning; 1985.
2. Hegenhahn BR, Olson, MH. An introduction

- to learning theories. New Jersey: Prentice Hall; 2000.
3. Atkinson RI, Atkinson RC, Smith EE, Bern Dy, Nolen-Hoeksema S. Hilgard's introduction to Psychology. Fort Worth, USA: Harcourt college publishers; 2000.
4. Balls, Motivation in education. London: Academic Press; 1977
5. Seif AA. Education Psychology. Tehran: Agah publishers; 1994.
6. Karimi Y. Social psychology of education. Tehran: Nashr Virayesh Institute; 1994.
7. Mosavi A, Arabzadeh-Moghadam M. Constructs contributing to students educational progress [MSc thesis]. Tehran: Artesh University of Medical Sciences; 1998.
8. Fathi-Nooran A. Socio-economic factors contributing to students educational progress [MSc thesis]. Shiraz: Shiraz University; 1994.
9. Zahdi-asl, M. Factors contributing to students educational progress. Shahed Seientifi Journal 1995; 92: 41-52
10. Delavar A. Factors contributing to educational failure of Allameh Tabatabaiee University [MSc thesis]. Tehran: Allameh Tabatabaiee University; 1994.
11. Amani F, Seigif, Abbasifaridigh. Factors contributing to students educational progress. Kadooseh Scientific Quarterly 2003; 4 (5): 17-21