Evaluation of Effecting Factors on Educational Status of Nutrition and Food Science Students

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Abstract: <u>Background & Objective:</u> The most important indicator of academic performance is student learning that it can be used to measure their educational status. This study was conducted with the aim of assessing effecting factors on educational status of nutrition and food science students an undergraduate School of Nutrition Science and food industry. <u>Methodology:</u> This is a descriptive and cross-sectional study which has been conducted during the year of 2010. Total undergraduate students (395) of food science and the food industry science in the College of food Sciences and nutrition industryin ShahidBeheshti Medical Universityhad been selected by census. Information on demographic characteristics, knowledge of the discipline and professionalism, space and learning environment by using questionnaires have been collected. The data had been analyzed by ANOVA, Pearson correlation coefficient, Toki test and SPSS/16.<u>Results:</u> In this research,maternal education level ($p<0.01$), the average family economic situation ($p<0.009$) and financial support for students ($p<0.015$), it is effect on educational status of students. According to the results of person correlation test,time until entering university diploma ($p<0.015$) and students Knowing of learning environment ($p=0.001$) showed a significant relationship with educational status. <u>Conclusion:</u> According to the results this study and the role of individual and family variables in the education process of students, that educational and culturalinstitutions develop a comprehensive and detailed plan in this regard and evaluate the resulting changes.[Soleiman A NJIRM 2017; 8(1): 97-103]

Keywords: Student, education, educational status

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Introduction: Training skilled and expert manpower needed by the community, promoting and enhancing knowledge, promoting and expanding research as well as paving suitable way for the development of the country are the main mission of the university. Medical sciences university's burden great responsibility to carry out this mission and should take the followings into consideration in the teaching process: primary cares, follow-up medical and healthcare treatment services, establishing mutual relationship between patient and doctor, training based on requirements of society, identifying problems, and formulating and implementing programs and finally, improving weaknesses and problems. In other words, universities of medical sciences should make their utmost efforts in fulfilling the abovementioned processes.[1]

Educational system of each country has special evolution which is influenced by historical, geographical, political, economic and social factors as well as cultural issues specific to that country. According to experts and thinkers, training efficient, competent and the most experienced individuals is one of the best methods to create and maintain a good educational system.[2,3]

Present and future conditions of individuals in society have led students to undertake more and heavier responsibilities at university like other walks of life.[4,5] Due to the success in education, students achieve a situation that can take maximum advantage of internal and external resources for attaining predefined goals of the higher education and obtain necessary conditions for successful social life.[6]Conversely, if students fail in education, such issue will lead to different social and personal problems. In this case, students will lag behind attaining predefined objectives of educational system.[7]Learning students is the most important indicator of academic performance. Students' educational status can be used to assess their learning level. Clarifying and explaining academic performance will empower planners of the university to predict strategies for improving performance and function of university.[8]

Continuous and permanent assessment of students' academic achievements is one of the indispensable and inevitable pillars for improving the educational system in the course of study especially in universities. Continuous evaluation of students' achievements can be done by comparing average score of students

acquired in different periods.[9]This issue is of paramount importance in formulating and compiling better educational program, promoting quality of education and finally, correcting and improving efficiency of relevant authorities.[10]

Obviously, it is important to evaluate and control for obtaining this important effect, so that movement is taken after in predefined path at any time desired. The results of studies conducted in the field of students' academic status confirm the effect of confounding factors [including demographic and intervention psychological specifications in students' academic behaviors] which can be taken into consideration in improving quality of education and educational progress of students.[11]Considering the special role of academic status in success or lack of success of universities and also success of graduates in higher educational levels, the present study has been conducted with the aim of studying factors affecting the academic status of students.

Methods: This study is of descriptive-correlation type which was conducted in academic year (2014-2015) on 395 students in nutritional sciences and food industry sciences in bachelor's degree (BSc.) who were studying at school of nutrition sciences and food industry, ShahidBeheshti University of Medical Sciences as cross-sectional mode. Sampling method was done based on "census" and subject of study included all the mentioned studies. After coordinating with the training and educational deputy office of the faculty, statistics of all students in Bachelor of Science (BSc.) were obtained in this study. Freshman (1st semester) and senior students (last semester) were considered as criteria of inclusion to this study. The consent form was signed by all participants in the research confirms. For this purpose, list of students was received from training department of the faculty. A table was designed for each of the mentioned students as included in the study. In this table, profile and specifications of students such as name, surname, student number and average score of students in each semester, etc. were extracted and noted down using SAMA software system. These tables were completed for eight inclusions of students in Nutrition Sciences and eight inclusions of students in Food Industry Sciences. The criteria for the exclusion of the study included as follows: 1: Guest students from other universities and/or students of this faculty who had been invited in other universities, 2: Transferred students and also students who had dismissed/dropped their study at university.

Researcher- made questionnaire was another tool that was used in this study. This questionnaire was designed in two parts. First part: The first part includes demographic information. The demographic data include as follows: academic degree, age, gender, date of birth, place of birth, marital status (married or single), average in diploma degree, timespan between the year diploma degree was received up to the period of entrance to the university, passing quota, employment status, number of children at family, number of conditional semesters, postal address of student, postal address of parents, educational level of father and mother, job of father and mother, economic situation and financial backup of student.

The second part of the questionnaire itself comprised of two parts as follows: the first part has eight questions with regard to the identification of academic course and professional role while the second part has nine questions with regard to the educational space and environment. The end of questionnaire was questioned with regard to the first academic courses selected by students at the time of selection of course I university entrance examination. Since most students are interested in admitting in Medicine or Dentistry and Pharmaceutical and with due observance to the working experience of researcher in primary and initial enrollment of students to this faculty, it seems that lack of accepting in one of the mentioned academic courses is the main reason behind unwillingness to the academic course and consequently, educational drop of students of this faculty. To study face/content validity, questionnaire was provided to a number of students and explanations, questions and defects were imposed in questionnaire in terms of this group. Cronbach's Alpha Coefficient with 14 samples (odd) was used to study reliability of the questionnaire. Reliability in the said part i.e. identification of academic course and professional role was obtained "0.914", the rate of which stood at 0.826 in educational space and environment. SPSS/16 software system, was used for analyzing data. Descriptive statistics methods were also used to set and regulate tables. For materializing objectives of research, parametric tests such as "Pearson", "Tukeytest" and "ANOVA" were used for statistical analysis.

Results: According to the results of this research, boys constituted 24.3 percent of participants in this study while girls constituted 75.7 percent of participants. In addition, 84.7 percent of participants were "single" while 15.3 percent of these participants were "married" other personal and individual specifications of the reported samples have been mentioned in Table 1. In this study, educational level of mother (P<0.01), average economic situation of family (P<0.009) and financial support for students (P<0.015) were found "effective" on the academic achievement of students. (Table 2).Also, according to the results of Pearson-Correlation Test, timespan for receiving diploma up to the time of entering the university (P<0.15) and identification of students from training environment (P=0.001) had significant relationship with the students' academic status. On the other hand, this test did not show any significant relationship between average (GPA) of students in diploma course and students' educational status (P=0.59). Using ANOVA analysis, any significant relationship was not observed between residences of students and educational status of students (P=0.59) as well as between students; university entrance quota and their job status (P=0.07).In this study, any significant relationship was not observed between employment of students and their educational status using independent t-test. (P=0.21). Studying the educational or academic status of students in Nutrition Sciences and Food Industry Sciences has been mentioned in Table 3 according to the studied variables. After academic disciplines such as Medicine, Dentistry and Pharmaceutical, Nutrition Sciences and Food Industry Sciences are considered as the first courses selected by volunteers during selection of course for university entrance examination. Hereunder is the question asked from students at the end of questionnaire: What was the first discipline as selected by students before entering the university?

In response to the above question, it should be noted that the maximum percentage included "Medicineand Dentistry" while the minimum percentage included "Nutrition Science" and "Food Industry Sciences".

Table 1. Distribution of demographic research unit

Variable	Frequency N %		Variable	Frequency N %	
Marital status	Single	283(843.7)	**Employment status**	Practitioner	46(14.5)
	Married	51(15.3)		Unemployed	271(85.5)
Father's job	Self-employed	151(46.6)	**History of failing**	Yes	20(6)
	Employee	173(53.4)		No	316(94)
Residence Location	With family	147(46.8)	**Gender**	Female	255(75.7)
	Dorm	161(51.3)		Male	82(24.3)
	Rental home With friends	2(0.6)			
	Rental home alone	4(1.3)			
Mother's job	Practitioner	105(31.4)	**The number of failed semesters**	0	316(94)
	Housewife	229(68.6)		1	9(2.7)
				2	8(2.4)
				3	3(0.9)
Family economic situation	Excellent	32(9.6)	**Field of Study**	Nutrition science	208(61.7)
	Good	102(30.6)			
	Average	191(57.4)		Food Science and Industry	129(38.3)
	Weak	8(2.4)			
Financial support	Father	200(59.9)	**Maternal education**	Illiterate	13(3.9)
	Mother	9(2.7)		Primary	33(9.9)
	Parents	101(30.1)		Guidance	34(10.2)
	Others	3(0.9)		High school	119(35.8)
	Spouse	18(5.4)		Collegiate	133(40.1)
	Own	5(1.5)			
Education Father	Primary	5(1.5)	**Region admission quotas**	Region 1	136(44.1)
	Guidance	24(7.3)		Region 2	103(32.1)
	High school	22(6.6)		Region 3	7(22)
	Collegiate	106(32)		Faculty quota	1(0.3)
		174(52)		Martyr quota	10(1.5)

Table 2.Educational status of samples

Variable		N	%	Mean & SD	P
Gender	Male	82	24.3	4.23±1.74	**0.085**
	Female	255	75.7	4.6±2.34	
Education Father	Illiterate	5	105	5.6±1.7	**0.097**
	Primary	24	7.3	4.9±1.79	
	Guidance	22	6.6	5.1±2.14	
	High school	106	32	4.7±2.7	
	Collegiate	173	52	4.2±2.3	
Education Mother	Illiterate	133	3.9	5.11±1.8	**0.01**
	Primary	33	9.9	5.34±1.85	
	Guidance	34	10.2	5.7±2.32	
	High school	119	35.8	4.64±2.36	
	Collegiate	133	40.1	4.7±2.12	
Father's job	Self-employed	151	46.6	4.46±2.1	**0.45**
	Employee	173	53.4	1.73±4.65	
Mother's job	Practitioner	105	31.4	4.5±2.45	**0.89**
	Housewife	229	68.6	4.5±2.11	
Family economic situation	Excellent	32	9.6	5.3±2.9	**0.009**
	Good	191	57.4	4.6±2.09	
	Average	102	30.6	3.99±2.7	
	Weak	8	2.4	4.1±2.17	
Financial support	Father	200	59.5	4.75±2.29	**0.027**
	Mother	9	2.7	3.9±2.16	
	Parents	101	30.1	3.9±2.03	
	Others	3	0.9	5.4±1.82	
	Spouse	18	5.4	5.4±1.12	
	Own	5	1.5	5.2±2.72	

Table 3.Sstatus of the academic units based on the variables studied

Variable		N	%	Mean &SD	P
The interval between diploma and university admission		297	100	0.9±1.18	**0.006**
Residency situation	With family	147	46.8	4.2±2.7	**0.598**
	Dorm	161	51.3	4.5±2.21	
	Rental home With friends	2	0.6	4.7±2.35	
	Rental home alone	4	1.3	4.4±2.95	
Region admission quotas	Region 1	131	44.1	4.5±2.14	**0.708**
	Region 2	98	32.1	4.7±2.34	
	Region 3	74	22	4.4±2.3	
	Faculty quota	1	0.3	2±0	
	Martyr quota	10	1.5	4.8±2.43	
Employment	Practitioner	46	14.5	4.9±2.03	**0.215**
	Unemployed	271	85.5	4.46±2.24	
Structural recognition and environment fields	Understanding of the Field of Study and professionalism	337	100	24.75±6.01	**0.00**
	The structure and learning environment	337	100	24.75±5.12	

Discussion: According to the results of study, gender is not effective on the students' academic achievement (P=0.08) while in a study conducted by Dante et al. entitled "Time Analysis on Individual Variables Associated with Academic Failure of Nursing Students", they came to this conclusion that gender was effective on students' academic achievement. Given the above issue, it was found that girl students had better academic achievement than boy students.[12]Also, Roudbari et al. in their study entitled "Determination of Factors Affecting Students' Educational Progress at Tehran University of Medical Sciences (Hemmat Campus)" they came to this conclusion that the number of boy students' conditional semesters exceeded girl students.[13]In this study, maternal education had significant relationship with students' academic achievement. (P<0.01)

In this study, it was found that maternal group with primary education and average academic status of students was better than students whose mothers had academic education using ANOVA analysis. In another study conducted by Rahimi et al. entitled "Evaluate Frequency and Factors Affecting Students' Academic Failure Living in Dormitories of Schools of Medicine and Health of Golestan University of Medical Sciences", it was found that students, who's their mothers had higher education, had good academic achievement.[14]With due observance to the said issue, it was found that students, whose their mothers had higher education degree, had better academic performance. Also, it was found that average economic status of family is effective on students' academic achievement and showed significant difference using ANOVA analysis test (P<0.009).

Accordingto Tukeytest, it was found that students, grown up in family with excellent economic situation, showed better performance than student grown up in family with good economic situation. It can be concluded that students with excellent economic status of their family showed higher performance than students with weak economic situation of their family. In this regard, study conducted by Arcia is consistent with the recent result of this study.[15]In another study conducted by Winton, it was found that students with good academic achievement enjoy good economic situation in their family (P<0.032).[16]Also, in studies conducted by Aud et al. and Alimoglu et al. and Kwok et al. they found that economic status of family has positive impact in students' academic achievement.[17-

[19]It should be noted that financial support for students are effective on academic achievement using ANOVA analysis test (P<0.015).

According to Tukey Test, it was found that students, who are supported by their fathers only, have shown better academic achievement than those students who are supported by both father and mother (parents). However, students' diploma average has not any significant relationship with their academic achievement using Pearson Correlation test (P=0.59). Result of study conducted by Kitila et al. also is consistent with the present study.[20]

In another study conducted by Khandaghi and Ajam, any significant difference was not observed between average of student in master's degree and diploma degree.[21]In a study conducted by Gheybi et al. it was found that students with good academic performance had high average in diploma.[22]Through the use of Pearson Correlation test, it was found that there is a significant relationship between obtaining date of diploma until entering the university (P<0.015). Given the above issue, it was found that students, who waited entering the university for a long time, had low educational and academic achievement, so that this case was not observed in other research activities. Any significant relationship was not observed in this study between students' entry quota and their academic status using ANOVA analysis test. (P=0.7).

The small number of students using Shahed quota (10 students) has been cited as one of the main reasons in this study, the issue of which can show unwillingness of these students to study in these two courses i.e. Nutrition Sciences and Food Industry Sciences. In this study, independent t-test did not show any significant relationship between employment of students and their academic achievement (P=0.21).Which is due to the small number of employees (46 persons) who participated in this study. However, we did not find any significant answer. In another study conducted by Dante et al. this relationship was significant i.e. students, who were working during study simultaneously, did not have a good educational status.[23]The results of the study showed that there is significant difference between identification of students from educational environment and their academic achievement (P=0.001).In a study conducted by Addus et al. it was found that motivation and interest in academic course and self- confidence were

considered as the most important factors affecting students'academic failure for students point of view.[24]Some other studies have pointed to the lack of interest (unwillingness) to academic course as main reason of passing courses conditionally by students.[25,26]

In the field of educational environment, hereunder are factors affecting educational status in view of students: more attention of officials to problems facing students, limited library facilities and also lack of use of proper educational technology due to the content of each course, etc. however, students believe that once they are paid due attention by educational officials, their will obtain better academic achievement.

Pitt et al. also mentioned a bright and clear image of job prospects as one of factors affecting educational and academic performance.[27]Once students are promised with bright job prospects, this issue plays an important role in their academic performance. In another study conducted by Raman et al. it was found that students with high academic performance consider internal factors on academic performance as "effective and constructive" as compared to the students with low performance.[28]However, students with high academic performance believe that internal factors play an important role in success of students in academic achievement.

Since most students selected academic courses in Medicine and Dentistry as their first choice and small number of students selected Nutrition Sciences and Food Industrial Sciences as their second choice, unwillingness and lack of interest in the course has been cited as one of the factors that can affect in students' academic achievement. Probably, since a number of students failed to pass university entrance and waited for entering the university for some years, they selected the course i.e. Nutrition forcibly without having interest in this academic course. All these cases can be cited as main reasons behind failure of some students to have good academic achievement. The main reason can be studied in subsequent researches. In the end, it should be noted that sporadic researches can be conducted with regard to the identification of the course and professional role of students due to the difference of job prospects of two academic disciplines i.e. Nutrition Sciences and Food Industrial Sciences.

In this study, palpable change can be observed in students' academic achievement in some of semesters, so that these changes can be studied in subsequent studies through studying curricula of students and also teaching method of university lecturers.

Conclusion: The results of study showed that family and individual factors have a significant effect on students' academic achievement. Therefore, paying due attention to these factors in designing and implementing educational programs of the university can play an important role in students' academic growth.

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