RDME
Research and Development in Medical Education

TUOMS Publishing Group

CrossMark
click for updates

Academic satisfaction and academic achievement among students at Kermanshah University of Medical Sciences: academic year 2015-2016

Khadijeh Jamshidi[1], Babak Mohammadi[2], Zahra Mohammadi[1], Mohammad Karimi Parviz[3], Roghayeh Poursaberi[4], Mohammad Mehdi Mohammadi[5*]

[1]The Student Research Committee, School of Public Health, Kermanshah University of Medical Sciences, Kermanshah, Iran
[2]Department of Business Management, Faculty of Social Sciences, Razi University of Kermanshah, Kermanshah, Iran
[3]Department of Political Science, Islamic Azad University of Qom, Qom, Iran
[4]Department of Education, Payame Noor University (PNU), Iran
[5]The Student Research Committee, School of Nursing and Midwifery, Kermanshah University of Medical Sciences, Kermanshah, Iran

Abstract

Background: Academic satisfaction is considered one of the most important factors affecting academic achievement among students. The purpose of the present study was to determine the relationship between academic satisfaction and academic achievement among students at Kermanshah University of Medical Sciences in Iran.

Methods: The present cross-sectional study was conducted with 346 student participants using stratified random sampling. The research instrument included the Student Academic Satisfaction Questionnaire, the Academic Performance Rating Scale, and student grade point average (GPA). Descriptive and inferential statistics were used to analyze the data. A 0.05 significance level was used for statistical tests.

Results: The mean score of academic satisfaction among students was 50.7 ± 9.8 and the academic satisfaction level was moderate in 46.2% of the students. Comparing the academic satisfaction level in different fields of study, students in health (58.5%), nursing (67.5%), and paramedics (51.1%) reported a moderate satisfaction level and students in midwifery (84.2%), pharmacology (53.5%), medicine (69.3%), and dentistry (55.5%) recorded a high satisfaction level ($P<0.05$). There was also a significant and positive correlation between academic satisfaction and academic achievement ($P = 0.001$, r = 0.02).

Conclusion: Academic satisfaction among the 46.2% students that reported a moderate level was far from the ideal level. The relationship between academic satisfaction and academic achievement also indicated that creating motivation among students and increasing their levels of satisfaction could provide the grounds for academic achievement among them as much as possible.

Introduction

Attention to educational quality is one of the primary goals of managers, professors and policymakers in the community health system.[1] Universities are seeking to meet students' needs and expectations and increase their satisfaction, since student satisfaction is one of the important factors in the growth and improvement of educational centers.[2] Furthermore, consideration of the factors affecting the level of satisfaction among university students, such as quality of theoretical and clinical education, evaluation processes, interactions, and social aspects, is of utmost importance.[3] An individual's

***Corresponding Author:** Mohammad Mehdi Mohammadi, Email: mehdi20.mohamadi@gmail.com*

satisfaction level is also correlated with their fields of study as well as future work opportunities; thus, fields of study can influence an individual's level of satisfaction with oneself.[4] Studies conducted in this area suggest a positive relationship between academic satisfaction and academic achievement among university students. Therefore, it seems that it is necessary to pay attention to the importance and role of academic satisfaction in terms of further success and academic achievement at the university level.[5,6] Considering the significance of academic satisfaction, special attention should be paid to the importance and the role of counselors; reinforcement of counseling within the university structure in order to monitor students' academic status as well as identify and provide the required medical care especially for university students at risk of psychological harm, and eventually attract family participation and interaction with the education system at the university level.[7] Furthermore, academic satisfaction is recognized as one of the principal measurement indices for quality of learning and teaching. Thus, a survey on the level of academic satisfaction among university students is regarded as a good tool for assessing both universities and students' academic achievement.[8] On the other hand, satisfaction with the field of study is one of the most important factors in the success of students and helps increase their motivation. This means that university students with high levels of satisfaction are more likely to have higher motivation and display greater efforts to gain better grades.[9] According to the related studies in this area, there is a greater chance of obtaining positive results such as academic achievement, success at work, and higher job satisfaction if there is a strong correspondence between an individual's motivation and their interests, skills, and professional personality (needs, demands, and environmental features.[10] Moreover, researchers believe that university students' grade point average (GPA) as a measure of their academic achievement is correlated with academic satisfaction. Some researchers have noted that university students' GPA is one of the predictors of academic satisfaction.[9,11]

To improve the educational status of university students, family supports, along with appropriate teacher-student interactions as well as educational facilities and opportunities within universities, can lead to progress in learning and academic satisfaction among university students.[12] While students' pessimism about the possibility of accommodating their basic and fundamental needs such as access to welfare facilities, appropriate jobs and income in future, as well as dissatisfaction with current university facilities and educational status, may play a major role in students' motivation and satisfaction.[13] Moreover, insufficient knowledge of fields of study can lead to disinterest, frustration, and subsequently academic failure.[14] In this regard, lack of academic satisfaction can reduce motivation and result in low efforts in students' academic activities.[15] Accordingly, higher incidences of

failure are seen in students who are less satisfied with their fields of study.[16]

Given high sensitivity among students of medical sciences and considering their direct connection with human life and community health, there is an urgent need to put increased emphasis on their empowerment and thus any factor increasing such empowerment is of utmost importance.[17] Since few studies had been published on the relationship between academic satisfaction level and academic achievement among university students in Iran and considering the fact that such a relationship had not been investigated at Kermanshah University of Medical Sciences, the purpose of this study was to determine academic satisfaction level and academic achievement among students enrolled in Kermanshah University of Medical Sciences.

Materials and Methods
Design, setting and participants
This study was a cross-sectional with analytic approach research on students of Kermanshah University of Medical Sciences in 2015-2016. The study population included all students of professional doctorate, master, bachelor, and associate degree enrolled in the academic year 2015-2016. Given the total number of university students enrolled at these levels of education (3018 people), a sample size of 346 was estimated using the Krejcie-Morgan sample size table.[18] Samples were selected using stratified random sampling. The sample size based on each school (Pharmacology, Medicine, Dentistry, Nursing and Midwifery, Paramedics and Health) was determined proportionate to a size assignment scheme (Figure 1). The inclusion criteria for this study included being a student at a college within Kermanshah University of Medical Sciences in the academic year of 2015-2016 and provision of informed consent to participate.

Measures and data collection
To measure the level of academic satisfaction, the Student Academic Satisfaction Questionnaire developed by Motlagh et al[16] at Ahvaz Jundishapur University of Medical Sciences was used. This questionnaire included 14 items based on a 5-point Likert-type scale (5 = totally agree to 1 = totally disagree). The total possible score range was between 14 and 70. Higher scores indicate a higher degree of satisfaction. In order to facilitate the interpretation of the results in the present study, scores between 14 and 32 were considered *low academic satisfaction*, scores from 33 to 51 were considered *moderate academic satisfaction*, and the scores between 52 and 70 were considered *high academic satisfaction*. The reliability of this questionnaire, using internal consistency and Cronbach's alpha, was calculated at 0.84.[16] In this regard, to assess the *content validity*, the questionnaire was checked and approved by 10 faculty members and researchers who were experts in the field of this study. To test the reliability, the questionnaire was
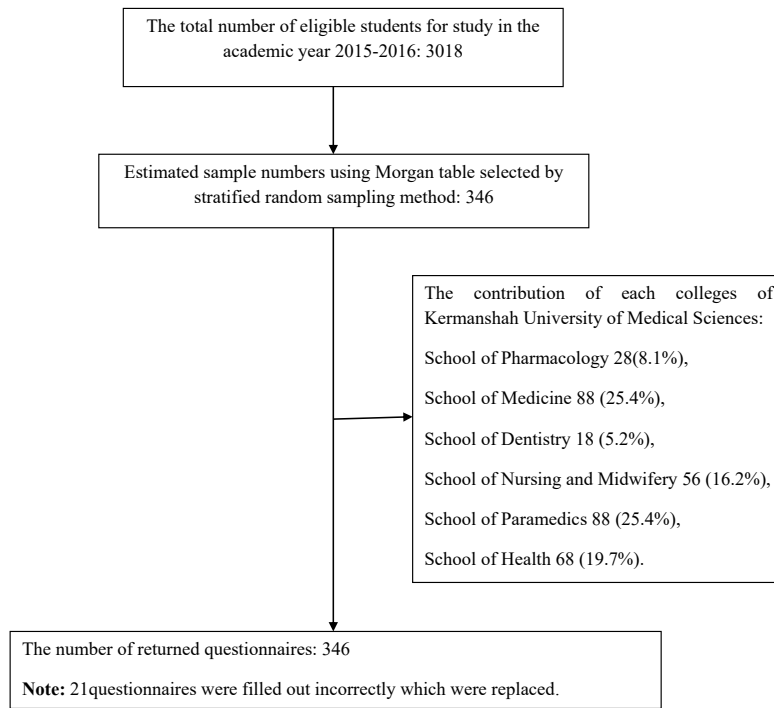
Figure 1. The Flow Chart Diagram of the Study.

distributed among 60 students of Kermanshah University of Medical Sciences and its reliability was confirmed by a Cronbach's alpha result of 0.88.

The criterion for the university students' academic achievement was also the difference between the total academic GPA and the previous semester GPA. Considering the academic achievement, the students were considered to be achieving academically if the difference between total academic GPA and previous semester GPA was positive; no academic achievement was reported if there was no difference, and academic failure was reported if the difference was negative.

Statistical analyses

Statistical analysis was done by SPSS version 16 (SPSS Inc., Chicago, IL, USA). Normality of the numeric variables was checked using the Kolmogorov-Smirnov test. Data were presented using mean (SD), median (min-max) for the numeric normal and non-normal variables, respectively, and frequency (percent) for categorical variables. The between-group comparisons of the variables were done using an independent t test, analysis of variance (ANOVA), Pearson's correlation and/or chi-square tests where appropriate. To assess the relationship between study variables and background/ demographic characteristics, univariate and multivariate regression modelling was used. In the multivariate model the effect of confounders was adjusted. The categorical variables were entered in the model as indicators. In all analyses, P values less than 0.05 were considered significant.

Results

Out of the 346 university students examined in this study, 215 (62.1%) students were female, 327 (94.5%) students were single, and 193 (55.8%) university students were living in dormitories. In terms of level of education, most of the students (n = 202; 58.4%) were enrolled in bachelor's courses (Table 1). The mean age of students was 22 ± 1.3 years, with a range of 18 to 29 years.

University students' academic satisfaction mean score was equal to 50.8 ± 9.8, with a range of 19 to 70. In this respect, the academic satisfaction level in 49.7% of the study participants was reported high. Additionally,

Table 1. Frequency distribution of demographic and academic characteristics of students at Kermanshah University of Medical Sciences

Variable	No.	%
Gender		
Female	215	62.1
Male	131	37.9
Marital status		
Married	19	5.5
Single	327	94.5
Level of education		
AS	10	2.9
BS	202	58.4
MS	23	6.6
Professional doctorate	111	32.1
Living in dormitory		
Yes	193	55.8
No	153	44.2

46.2% of the university students reported a moderate level of academic satisfaction and 4% reported a low level of academic satisfaction. No statistically significant differences were seen in terms of students' academic satisfaction level in various fields of study ($P < 0.05$). The mean score of academic satisfaction among students in health was 46 ± 9.9, 47.5 ± 7.6 for students in nursing, and 49.8 ± 10.1 for students in paramedics. Students in pharmacology reported a mean score of 52.2 ± 8.9 and students in medicine obtained the mean score of 54.2 ± 9.5. Students in dentistry and midwifery reported mean scores of 54 ± 6.7 and 57.4 ± 7.2, respectively. The levels of academic satisfaction among most of the university students examined in the fields of study were moderate, including health (58.8%), nursing (67.5%) and paramedics (55.5%). Academic satisfaction among students in midwifery (84.2%), pharmacology (53.5%), and dentistry (55.5%) was reported at a high level. Academic satisfaction at various levels of education was found to be significantly different ($P = 0.002$) between students enrolled in bachelor's courses (54.3%; moderate) and doctoral students (64.8%; high) (Table 2).

A significant and negative correlation was observed between levels of education and academic satisfaction ($P = 0.001$ and $r = -0.02$) in this study, indicating that freshman and sophomore students had the highest level of academic satisfaction compared with other students. The mean score of academic satisfaction among students was significantly and positively correlated with age ($P = 0.001$ and $r = 0.02$). In addition, the mean score of academic satisfaction was significantly correlated with gender, marital status, and living in a dormitory ($P < 0.05$). The mean score of academic satisfaction in men (51.8 ± 10.6) was also higher than that seen in women (50.2 ± 10.6). A mean score in single students (51.0 ± 9.7) was higher than that seen in married individuals (46.6 ± 12). Furthermore, the mean score of students living in a dormitory (52 ± 9.8) was higher than that seen in native students (49.2 ± 9.8). The mean of the total GPA among university students

was 15.95 ± 1.2 with a range of 12.00 to 19.75. Moreover, the mean of the total GPA of the female students (16.03) was higher than that of the males (15.00) and this GPA in native students (16.10) was reported higher than that in students living in dormitories (15) ($P < 0.06$). The mean GPA was also inversely and significantly correlated with level of education ($P = 0.001$ and $r = -0.05$) and age of students ($P = 0.001$ and $r = -0.02$). Overall, 44.7% of university students had positive academic achievement compared with that in the previous semester, 33% of them had no change in academic achievement, and 22.3% of these individuals had a decline in academic achievement. The academic achievement level in men was higher than that in women, but this difference was not significant. In addition, academic achievement was correlated with fields of study and levels of education ($P < 0.05$). The highest level of academic achievement was reported in students in Health (57.3%) who were enrolled in bachelor's courses (52.5%) (Table 3).

The results revealed that academic satisfaction was significantly and positively correlated with academic achievement ($P = 0.001$ and $r = 0.02$).

Regarding the multiple model of regression, the *criterion* variable was academic achievement and *predictors* were gender, marital status, level of education, academic year, academic satisfaction, and residence. In the case of *categorical variables*, the dummy coding technique was used. The variables entered into the model were professional doctorate, a native (domestic student), and academic year (freshman, sophomore, junior & senior) to predict academic achievement ($p < 0.05$) (Table 4). Female gender, being single, an undergraduate degree, and living in a dormitory were *excluded variables* by SPSS software. The R square value was 0.33, which means that 33% of the total variation of the dependent variable is explained by independent variables.

Discussion

The purpose of this study was to investigate the academic

Table 2. Academic satisfaction level in different educational departments and levels of education

Variables		Academic satisfaction [a]			P value [b]
		Low	Moderate	High	
		No. (%)	No. (%)	No. (%)	
Field of study	Health	8 (11.7)	40 (58.8)	20 (29.4)	0.0001
	Nursing	1 (2.7)	25 (67.5)	11 (11)	
	Midwifery	-	3 (15.7)	16 (84.2)	
	Paramedics	4 (4.5)	45 (51.1)	39 (44.3)	
	Pharmacology	-	13 (46.4)	15 (53.5)	
	Medicine	1 (1.1)	26 (29.5)	61 (69.3)	
	Dentistry	-	8 (44.4)	10 (55.5)	
Level of education	AS	-	5 (50)	5 (50)	0.001
	BS	13 (6.53)	107 (53.4)	81 (40)	
	MS	1 (4.3)	8 (34.8)	14 (60.8)	
	Professional doctorate	-	39 (35.1)	72 (64.8)	

[a] Chi-square test; [b] Significant at the 0.05 level.

Table 3. Academic achievement level in different educational departments and various levels of education

Variables		Academic satisfaction [a]			P value [b]
		Academic failure	No achievement	Academic achievement	
		No. (%)	No. (%)	No. (%)	
Field of study	Health	14 (20.6)	15 (22)	39 (57.3)	0.005
	Nursing	13 (35.1)	5 (13.5)	19 (51.3)	
	Midwifery	2 (10.5)	8 (42.1)	9 (47.3)	
	Paramedics	18 (20.4)	29 (33)	41 (46.6)	
	Pharmacology	11 (39.3)	11 (39.3)	6 (21.4)	
	Medicine	14 (15.9)	39 (44.3)	35 (39.7)	
	Dentistry	5 (27.7)	7 (38.8)	6 (33.3)	
Level of education	Associate's degree	3 (30)	5 (50)	2 (20)	0.002
	Bachelor's degree	44 (22.1)	52 (25.7)	106 (52.5)	
	Master's degree	2 (8.7)	14 (60.8)	7 (30.4)	
	Professional doctorate	28 (25.2)	43 (38.7)	40 (36)	

[a] Chi-square test; [b] Significant at the 0.05 level.

Table 4. Academic achievement and its predictors [a]

Model [b]	Unstandardized coefficients		Standardized coefficients	t	P value [c]
	B	Standard error	Beta		
Academic satisfaction	0.008	0.005	0.096	1.745	0.082
Male	-0.133	0.094	-0.079	-1.420	0.157
Married	-0.049	0.190	-0.014	-.255	0.799
AS	-0.311	0.275	-0.064	-1.130	0.259
MS	-0.098	0.185	-0.030	-.528	0.598
Professional doctorate	-.0557	0.123	-0.318	-4.546	0.0001
Freshman	-0.682	0.200	-0.280	-3.408	0.001
Sophomore	-0.751	0.179	-0.387	-4.203	0.0001
Junior	-0.501	0.180	-0.266	-2.780	0.006
Senior	-0.555	0.171	-0.297	-3.249	0.001
Native	0.275	0.096	0.167	2.877	0.004

[a] Dependent variable: academic achievement.
[b] Multiple linear regression modeling.
[c] Significant at the 0.05 level.

satisfaction level and its relationship to academic achievement among students at Kermanshah University of Medical Sciences in Iran. In this study, the academic achievement level among majority of participants was reported as high and these findings were consistent with the findings of the study by Shakurnia et al, suggesting that academic achievement among students of nursing and midwifery were at a high level.[6] The results of the investigation by Edraki et al also revealed that more than half of the students of nursing were at a moderate level of academic satisfaction.[5] However, Sanagoo and Hesam described that their study participants had low academic satisfaction levels.[12] The inconsistency of the results of this study was probably due to differences in the study population, cultural differences among university students, various fields of study, and different sample sizes. In addition, one of the factors affecting an increased academic satisfaction level among students enrolled in Kermanshah University of Medical Sciences was the attractiveness of fields of study from the attitude of the students as well as the availability of the relevant professors and communication with them.

The academic satisfaction levels among students of various fields of study were also different in the present investigation. In this respect, the lowest level of academic satisfaction was observed among the students in health while most of the students in health had positive attitudes towards their fields of study in the investigations by Mobarakabadi et al[19] and Rejali et al.[20] The difference in the various results can be due to the difference in the questionnaires used, or possibly the time interval between these studies and the present study.

It was similarly assumed that the social status of a field of study and society's beliefs regarding its importance were among the most significant factors influencing attitudes in students towards their field of study and academic achievement. It has also been shown that students' attitude towards the field of study is closely correlated with students' attitudes toward the career in the future. Therefore, due to the uncertain future career of Health students, this could be one of the reasons for their less academic satisfaction.[20] The highest level of academic satisfaction in this study was found among students in Midwifery, Medicine, and Dentistry. In the study by Shakurnia et al[6] over 2 groups of

university students, the results also revealed high levels of satisfaction among the students in midwifery. Moreover, the findings in the investigation by Anbari et al showed a high level of academic satisfaction among the students in medicine, which confirmed the results of the present study.[7] It was argued that the students in medicine and dentistry were endowed with higher levels of academic satisfaction compared with other university students because their fields of study were among the most popular ones in Iran.

In this study, there was a significant relationship between the status of academic satisfaction and the status of residence (native or non-native); academic satisfaction was higher in dormitory students. In the study by Mobarakabadi et al, there was a significant relationship between academic satisfaction and being native or non-native,[19] but there was no significant relationship between academic satisfaction and place of residence in the study by Mehrabian et al in Gilan.[21]

The results of the present study showed a significant relationship between marital status and academic satisfaction, which was confirmed by the study that was conducted at Isfahan University of Medical Sciences.[20] But there was no significant relationship in the study was done among health students at Arak University of Medical Sciences.[19] In this study, the academic achievement of single students was higher than married students. It may be that the particular problems of married students to study properly can affect their educational satisfaction, which requires the attention of educational authorities.

Moreover, a significant and negative correlation was found between levels of education and academic satisfaction, so that the freshman and sophomore students had the highest academic satisfaction level compared to other students. These findings were consistent with the results of the study by Edraki et al, in which freshman students had the highest level of satisfaction.[5] Also, in the study of Rejali et al, at higher educational levels, students' attitudes toward their field and future career were worse.[20] Accordingly, the high volume of tasks was considered as a factor that may decrease academic satisfaction levels at higher levels of education. On the other hand, concerns about finding a job after graduation, a large number of jobless individuals in Iran, and a lack of support from educational staff were taken into account as the probable factors affecting levels of academic satisfaction at higher levels of education.[5]

In this study, the mean of the GPA obtained by female individuals was higher than that obtained by males; these results were in line with the results of the investigation by Anbari et al.[7] There was also a significant difference between levels of satisfaction with fields of study among male and female university students such that satisfaction levels in male students were assessed higher than those in females, which was in agreement with the findings of the study by Firouznia et al[22] and Anbari et al[7] in which male university students were more satisfied with their fields

of study than females. The reason for such inconsistency may have been due to a higher sense of competition, comparison, and perfection among female university students than males.

A relationship was also found between academic satisfaction and academic achievement among university students in this study which was consistent with the results of other investigations[5,6,22,23] suggesting a relationship between high level of satisfaction with fields of study and academic achievement. It should be noted that satisfaction as a motivating factor can have an impact on individuals' activities and also increase their achievement. Furthermore, there is a mutual relationship between academic satisfaction and academic achievement. Thus, academic satisfaction increases owing to the bilateral relationship in terms of improved academic achievement. However, the findings of the study by Anbari et al showed a significant and negative relationship between satisfaction with fields of study and academic achievement among students of Arak University of Medical Sciences such that successful students were less satisfied with their fields of study. The GPA means among students enrolled in nursing, midwifery, and paramedics were higher than those of students in medicine, who had also lower levels of satisfaction with their fields of study. The mean GPAs among students in nursing and paramedics as well as academic achievement among the students enrolled in health and nursing were also higher compared with other university students, although these students reported lower satisfaction with their fields of study. It may be that successful university students in these fields of study were eligible to study other high-ranking fields of study, and their current fields may not have been challenging enough. Moreover, special attention to students in medicine and dentistry in the academic environment could cause successful individuals enrolled in other schools to feel dissatisfied with their current fields of study given their high GPA.[7]

According to the results of multiple linear regression modeling, students' academic year was associated with academic achievement. The findings of the study by Sanaeinasab et al showed that the academic year can play a significant role in determining the academic achievement of students.[24] One of the reasons for academic achievement in this regard could be a targeted increase in the focus of high-level students on the content and using of curriculum and educational content. High-level students are also well-versed in the learning environment, and have passed beyond the inconsistencies that new students face with university spaces and challenges. Of course, different educational programs and, consequently, the number of courses that are presented in different sections, can act as a confounding factor in comparing academic achievement with the academic year. Therefore, the results of such a comparison should be interpreted cautiously.

Among the limitations of this study was a lack of

cooperation from some university students. It was assumed that university students with low academic satisfaction levels did not participate in the present study, which could have affected the results. Therefore, the researchers were suggested to influence the willingness of university students in order to take part in such studies through their encouragement and counseling. It should be noted that "academic satisfaction" was examined in the present study and it was recommended to determine the dimensions of satisfaction, including satisfaction with educational status of university, facilities, physical environment, methods of registration, etc. Furthermore, it was suggested to do further investigations on factors affecting academic satisfaction and achievement.

Conclusion

Given the results of the present study, academic satisfaction among a large number of students studying medical sciences was reported at a moderate level across all students and programs, which was far from the ideal level. Moreover, the students in health, nursing, and paramedics were more vulnerable among those enrolled in other fields of study in terms of satisfaction with their fields of study. In terms of academic achievement, factors such as gender, academic year, being native, and field of study can play an important role in student academic performance. Therefore, due to these factors, educational authorities can design targeted curricula.

The significant and positive relationship between academic satisfaction and academic achievement also demonstrates that academic achievement can be improved through encouraging university students and increasing their satisfaction with their fields of study. Therefore, creating more motivation among students in Health, Nursing, and Paramedics could pave the way for academic achievement in these fields of study. On the other hand, academic failure was high among students in medical sciences, which requires further investigations in this regard.

Ethical approval

This study was approved by Ethics Committee of Kermanshah University of Medical Sciences with the code number KUMS. REC.2015.317. In order to collect the data, informed consent was obtained from each participant.

Competing interests

The authors declare that there is no conflict of interest.

Authors' Contributions

KJ and MKP designed the study. ZM and RP collected the data and performed study supervision. BM analyzed data. MMM and KJ contributed to drafting the manuscript.

References

1. Megha KA. Customer satisfaction with low cost airlines in India. South Asian Journal of Tourism and Heritage. 2009;2:119-34.
2. Dehghani A, Mehboodi L, Zarei Z, Farokhabadi F, Benrazighabesh A, Baharlou R. Evaluation of Jahrom University of Medical Sciences teachers' attitude toward variables related to students' academic satisfaction. J Med Educ Dev. 2014;7(14):38-47.
3. Hakim A. Factors affecting satisfaction of nursing students of nursing major. J Nurs Educ. 2013;2(2):10-20.
4. Hakim A. Nursing students' satisfaction about their field of study. J Adv Med Educ Prof. 2014;2(2):82-7.
5. Edraki M, Rambod M, Abdoli R. The Relationship between Nursing Students' educational Satisfaction and their academic success. Iran J Med Educ. 2011;11(1):32-9. [Persian].
6. Shakurnia A, Alijani H, Najjar SH, Elhampour H. Correlation between educational satisfaction and approaches to study and academic performance; a study of nursing and midwifery students. Iran J Med Educ. 2014; 14(2):101-9. [Persian].
7. Anbari Z, Jamilian H, Rafiee M, Qomi M, Moslemi Z. The relationship between students' satisfaction with major, mental health and academic achievement in Arak University of Medical Sciences. Iran J Med Educ. 2013;13(6):489-97. [Persian].
8. Shakurnia A, Alijani H, Najjar S, Komeili H, Elhampour H. The effect of two assessment methods on exam preparation and study strategies: multiple choice and essay questions. Iran J Med Educ. 2013;13(4):306-18. [Persian].
9. Alizadeh SH, Sigarchian M. The motivation of choosing midwifery field of study and related factors among the midwifery students of Islamic Azad University, Rasht Branch, Iran. Journal of Medical Education Development Center. 2013;10(1):78-86. [Persian].
10. Mostafavi A, Ramezanloo p, Asgari N. Pharmacy students' reasons for choosing pharmacy as a career and changes in their motivation during the course. J Med Educ Dev. 2013;5(9):33-41.
11. Wright B, Scott I, Woloschuk W, Brenneis F, Bradley J. Career choice of new medical students at three Canadian universities: family medicine versus specialty medicine. CMAJ. 2004;170(13):1920-4.
12. Sanagoo A, Hesam M. Academic under-achievement and some related factors associated with academic satisfaction in Golestan University of Medical Sciences' Students. J Res Dev Nurs Midwifery. 2013;9(2):90-6.
13. Samadi MT, Taghizadeh J, Kashitarash Esfahani Z, Mohammadi M. Evaluating environmental health students' attitudes toward their discipline and future career in Hamedan University of Medical Sciences in 2008. Iran J Med Educ. 2010;9(4):331-6. [Persian].
14. Kamali S, Jafari E, Fathi A. The midwifery student's motivation towards career choice in Zanjan School of Nursing and Midwifery in 2010. J Med Educ Dev. 2010;3(4):40-6.

15. Changizy Ashtyani S, Shamsi M, Mohammadbeygi A. Frequency of educational decline and some effective factors of student's opinion in Arak University of Medical Sciences, 2009. Arak Medical University Journal. 2010;12(4):24-33. [Persian].

16. Motlagh ME, Elhampour H, Shakurnia A. Factors Affecting Students' academic failure in Ahvaz Jundishapur University of Medical Sciences in 2005. Iran J Med Educ. 2008;8(1):91-9. [Persian].

17. Behnampour N, Heshmati H, Rahimi S. A survey on paramedical and health students' satisfaction with their discipline and some of the related factors. Iran J Med Educ. 2012;12(8):616-8. [Persian].

18. Krejcie RV, Morgan DW. Determining sample size for research activities. Educ Psychol Meas. 1970;30(3):607-10.

19. Mobarakabadi A, Shamsi M, Najafianzadeh M. Health Student Attitude towards Their Field of Study and Future Career in Health Faculty of Arak University of Medical Sciences, Iran. Strides Dev Med Educ. 2014;11(2):280-5.

20. Rejali M, Mostajeran M, Lotfi M. Health student a attitude towards their field of study and future career in health faculty of Isfahan University of medical sciences. Health System Research. 2010;6(1):106-14. [Persian].

21. Mehrabian F, Dadash Khah Z, Karimi Z. Attitude of Environmental Health students toward their discipline and future career in Guilan University of Medical Sciences. Res Med Educ. 2012;4(1):43-8. doi: 10.18869/acadpub.rme.4.1.43.

22. Firouznia S, Yousefi A, Ghassemi G. The Relationship between academic motivation and academic achievement in Medical Students of Isfahan University of Medical Sciences. Iran J Med Educ. 2009;9(1):79-84. [Persian].

23. Sanaei Nasab H, Rashidy Jahan HH, Tavakoli RR, Delavari AR, Rafati HH. Amount of health-treatment services management bachelor students' satisfaction from their educational field. Educ Strategy Med Sci. 2010;3(1):5-6.

24. Sanaeinasab H, Rashidi jahan H, Saffari M. Influential factors on academic achievement of university students. Educ Strategy Med Sci. 2013;5(4):243-9.