



# Quality of Clinical Education as a Propulsive Engine for Academic Satisfaction: A Cross-Sectional Study at Birjand University of Medical Sciences, Birjand, Iran

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## Abstract

**Background:** Clinical education is known as an essential part of education in medicine and medical education. Beyond factors that can affect the quality of clinical education, academic satisfaction is a factor that can either affect or is affected by the quality of clinical education.

**Objectives:** The present study was designed to investigate the relationship between the quality of clinical education and academic satisfaction through medical students' viewpoints at Birjand University of Medical Science, Birjand, Iran.

**Methods:** In the present cross-sectional study, medical students in both the externship and internship courses of Birjand University of Medical Sciences were evaluated with a self-report questionnaire. The quality of clinical education was assessed by a specific scale developed by Rezaei. Academic satisfaction was evaluated by Motlagh et al.'s questionnaire.

**Results:** A total of 180 medical students were included in the study. The findings indicated that despite the poor quality of clinical education from the perspective of the studied medical students ( $P = 0.017$ ), their academic satisfaction with the current situation was acceptable ( $P = 0.0001$ ). Further correlational analysis revealed a significant relationship between the quality of clinical education and its subgroups with academic satisfaction ( $P < 0.01$ ).

**Conclusions:** It can be concluded that higher clinical education quality leads to higher levels of academic satisfaction among medical students. Therefore, this issue requires continuous revisions of the clinical education curriculum and adherence to improve its outcomes.

**Keywords:** Clinical Education, Medical Education, Academic Satisfaction

## 1. Background

During the past decades, one of the primary roles of medical universities has been to train professionals and skilled human resources that are needed by society and expand research and provide a favorable environment for the development of the country. Therefore, being up-to-date and continuously reforming the educational process, especially the clinical process, can improve the quality of medical education (1, 2). In detail, clinical education is the key factor in training medical students for their future role in society; therefore, its quality was always under strict supervision (3, 4). In addition to

different factors that can affect the quality of clinical education quality, such as resources and facilities problems, outpatient education problems, inadequate educational management, weaknesses in educational skills, inadequate clinical teaching methods, and lack of professional empowerment and promotion, several studies indicated that quality of clinical education could affect medical students' academic satisfaction (3, 5-7).

According to the World Declaration on Higher Education for the 21st Century, United Nations Educational, Scientific and Cultural Organization has emphasized academic satisfaction as the main factor in promoting

the quality of education (8). Previous investigations determined that higher levels of academic satisfaction not only improve the individual outcomes of education but also push the university's quality forward (9). However, various factors, such as students' culture, course contents, teaching methods, feedback and support, evaluation methods, educational curriculum, and environmental factors, can affect the status of the student's academic satisfaction, especially in medical education (10-12).

Previous studies revealed various findings regarding the relationship between the quality of clinical education and academic satisfaction in medical faculties. In detail, a study conducted in Bosnia and Herzegovina reported that nearly half of the studied population was unsatisfied with the clinical education quality, which leads to low levels of clinical competency (13). However, an Indian study represented a wide range of dissatisfaction among medical students in clinical education, which was reported within 40 - 85% in different fields (14). Additionally, previous studies conducted in Iranian medical faculties demonstrated a wide range of academic satisfaction and clinical education quality. Nevertheless, a study at Iran University of Medical Sciences, Tehran, Iran, revealed a high rate of academic satisfaction due to clinical education quality. A similar study at Shahrekord University of Medical Sciences, Shahrekord, Iran, showed vice-verse findings (15, 16).

Despite some studies that have investigated the quality of clinical education or academic satisfaction all over the world, due to the unique aspects of each university and institution, various and even non-generalizable findings have been released to date. Moreover, to the best of our knowledge, there were few studies that investigated both the qualities of clinical education and academic satisfaction status together.

## 2. Objectives

The present study was designed to investigate the relationship between the quality of clinical education and academic satisfaction through medical students' viewpoints at Birjand University of Medical Science, Birjand, Iran.

## 3. Methods

### 3.1. Study Design

The present cross-sectional study was conducted to investigate the relationship between the quality of clinical education and academic satisfaction among medical students of Birjand University of Medical Sciences within

2019 - 2020. All the medical students in the externship and internship courses during the mentioned period were included in the study using stratified random sampling. However, incomplete surveys were excluded from the study. In detail, the strata were externship and internship courses. Despite considering incomplete surveys as the exclusion criteria, there were no incomplete surveys to exclude, and all the invited students participated in the study. The Ethics Committee of Birjand University of Medical Sciences approved the protocol of this survey (code: [IR.BUMS.REC.1398.099](#)), and all the respondents gave informed consent.

### 3.2. Survey Development

A self-report questionnaire was applied to enroll the participants in the present study consisting of three sections. The first section included the demographic characteristics of the participants (e.g., age, gender, grade point average, and educational course). The second section evaluated the quality of clinical education by a specific scale developed by Rezaei (17). This questionnaire consisted of 32 items in five subgroups, including goals and educational plans, supervision and evaluation, instructor's performance, educational environment, and dealing with students, on a three-point Likert scale. The questionnaire's validity and reliability were approved by Rezaei at a Cronbach alpha level of 0.91 (17). Academic satisfaction was evaluated by Motlagh et al.'s questionnaire, which consisted of 14 items on a Likert scale as the third section (18). The questionnaire's validity and reliability were approved by Motlagh et al. at a Cronbach alpha level of 0.84 (18).

### 3.3. Sample Size and Statistical Analysis

The study's sample size was calculated at 180 participants (92 and 88 individuals in the externship and internship courses, respectively), based on the Krejcie and Morgan's table as cited by Ahmad and Halim (19). Statistical analysis was conducted using SPSS software (version 25; SPSS Inc., Chicago, USA). Descriptive statistics for the demographic characteristics were presented by the mean and standard deviation for quantitative variables and frequency (percentage) for qualitative variables. The independent *t*-test and Pearson correlation test were used to investigate the relationship between qualitative variables. A P-value less than 0.05 was considered the significance level.

## 4. Results

Among 180 medical students who participated in the present study, 117 (65%) and 63 (35%) students studied

the externship and internship courses, respectively. The results showed that 110 (61.1%) and 70 (38.9%) students in the studied population were female and male, respectively. The grade point average of all the participants was evaluated as  $16.68 \pm 1.05$ .

The findings indicated that despite the poor quality of clinical education from the perspective of the studied medical students ( $P = 0.017$ ), their academic satisfaction with the current situation was acceptable ( $P = 0.0001$ ). There were significant differences between externs' and interns' viewpoints on the quality of clinical education ( $P = 0.001$ ). However, this difference was not significant regarding academic satisfaction ( $P = 0.059$ ). Moreover, there was no significant difference between male and female scores in the quality of clinical education ( $P = 0.84$ ) and academic satisfaction ( $P = 0.41$ ). [Table 1](#) shows a detailed analysis based on the quality of clinical education subgroups.

Further correlational analysis revealed a significant relationship between the quality of clinical education and its subgroups with academic satisfaction ( $P < 0.01$ ). [Table 2](#) shows details of this correlation.

## 5. Discussion

Due to the objectives of the current study, the results of this survey showed that although the overall quality of clinical education at Birjand University of Medical Sciences was poor, the participating medical students stated acceptable academic satisfaction. Today, providing and maintaining health for the community has a special role in the economic and social development of societies. Moreover, the improvement of the quality of health and medical services is considered one of the important factors in the development of a country; in this regard, professional human resources are regarded as a significant factor (20). It should be noted that medical students' academic satisfaction in clinical environments is influenced by the environment quality. Medical students, as the main recipients of educational services, are the best source for identifying the problems of either medical or clinical education, as they have direct and indirect interaction with this process. Furthermore, identifying the state of clinical education helps improve the weak points and can enhance the achievement of educational goals, train professional individuals, and provide higher-quality care services (21, 22).

A detailed view of the present study's results indicated that there was a low level of clinical education parameters (including goals and educational plans, dealing with students, educational environment, and supervision and evaluation) at Birjand University of Medical Sciences;

however, instructor's performance in this study was evaluated appropriately. In line with the current study's findings, some other studies at Yasuj University of Medical Sciences, Kohgiluyeh and Boyer-Ahmad, Iran, and Baqiyatallah University, Tehran, Iran, showed that these universities had low-quality of clinical education (23, 24). These differences could be due to several factors, such as the role of policymakers in each university, the role of attendance in universities and their properties, and even the scientific levels of faculty members and students, which might be involved in these outcomes. To improve the quality of the above-mentioned criteria, there are some suggestions that can lead to a higher quality of clinical education, including the adjustment of either externship or internship groups in medical departments, notifying the duties of trainers and students, regular monitoring of clinical training program, obtaining periodical feedback from trainers and students, and involving them in the design of training programs.

As academic satisfaction can consider an index for the quality of learning and academic improvement, it can present the appropriate educational function of the university. The present study showed that the studied medical students had a satisfactory viewpoint regarding the Birjand University of Medical Sciences' educational status, which is similar to that of Tehran University of Medical Sciences as an Iranian medical university and another study by Chan et al. in Taiwan (25, 26). The current appropriate level of academic satisfaction could be better, and further interventions are required to improve the situation.

The present study revealed a significant relationship between the quality of clinical education and its subgroups with academic satisfaction, which represents the fact that a higher quality of clinical education can lead to higher levels of academic satisfaction. Therefore, paying attention to the students by assessing the curriculum and adherence to the standard curriculum, exactly evaluating medical students' skills, providing constructive feedback to the medical students, highlighting evidence-based medicine through clinical training, and covering the gaps in the current curriculum using novel methods can improve both academic satisfaction and clinical education quality as two dependent factors (27, 28).

In line with several studies by Sharifi et al. (24) and Anbari and Ramezani (29), the present study observed significant differences between externs' and interns' evaluation of the clinical education quality of Birjand University of Medical Sciences. Considering the higher quality of clinical education and its components (i.e., goals and educational plans, instructor's performance, and supervision and evaluation) in the externship courses

**Table 1.** Detailed Analysis of Variables Based on Participants' Gender and Educational Course

Characteristics	Mean ± SD	t-value	df	P-value
<b>Goals and educational plans</b>				
Gender		0.55	178	0.57
Male	10.64 ± 4.35			
Female	11.2 ± 4.38			
Educational course		3.67	178	0.001
Externship	11.75 ± 4.12			
Internship	9.24 ± 4.35			
<b>Instructor's performance</b>				
Gender		1.23	178	0.21
Male	10.6 ± 3.87			
Female	1.29 ± 2.38			
Educational course		3.06	178	0.003
Externship	11.64 ± 3.20			
Internship	9.85 ± 3.98			
<b>Dealing with students</b>				
Gender		-0.91	178	0.36
Male	3.25 ± 1.60			
Female	3.02 ± 1.66			
Educational course		1.85	178	0.065
Externship	3.28 ± 1.63			
Internship	2.80 ± 1.61			
<b>Educational environment</b>				
Gender		0.57	178	0.056
Male	3.13 ± 2.16			
Female	3.32 ± 2.16			
Educational course		1.59	178	0.11
Externship	3.44 ± 2.13			
Internship	2.90 ± 2.16			
<b>Supervision and evaluation</b>				
Gender		-1.18	178	0.23
Male	3.20 ± 1.98			
Female	2.87 ± 1.70			
Educational course		2.53	178	0.012
Externship	3.25 ± 1.79			
Internship	2.53 ± 1.78			
<b>Quality of clinical education (overall score)</b>				
Gender		0.21	178	0.83
Male	30.75 ± 11.27			
Female	31.12 ± 10.29			
Educational course		3.46	178	0.001
Externship	33.06 ± 9.90			
Internship	27.22 ± 10.99			
<b>Academic satisfaction</b>				
Gender		0.81	178	0.41
Male	49.23 ± 10.21			
Female	48 ± 9.43			
Educational course		1.90	178	0.059
Externship	49.50 ± 9.65			
Internship	46.61 ± 9.68			

**Table 2.** Pearson Correlation Between Quality of Clinical Education and Its Subgroups with Academic Satisfaction

Variable	Academic Satisfaction	
	r	P-Value
Goals and educational plans	0.23	0.002
Instructor's performance	0.24	0.001
Dealing with students	0.21	0.004
Educational environment	0.23	0.002
Supervision and evaluation	0.24	0.001
Quality of clinical education (overall score)	0.27	0.001

than the internship courses, it can be stated that there is a need for reforms in the internship course at Birjand University of Medical Sciences. The high number of on-call cases due to the lack of interns, fatigue due to the interns' duties, lack of residents in some departments, and lack of time for the study could be some significant factors leading to this difference between externs and interns. There are several suggestions to improve the current situation, including managing the number of interns in each department and training outpatients (to improve goals and educational plans area) based on the subgroups, applying virtual education (to improve instructor performance area), and preparing appropriate log-books (to improve supervision and evaluation area).

The present study presented a detailed view of the current educational situation of Birjand University of Medical Sciences, had a reliable sample size, and applied valid surveys as the strong points of the study. However, there were several limitations in the present study. Firstly, this study evaluated two groups of medical students (in the externship or internship courses at the time of the study). Secondly, this study did not evaluate the quality of clinical education in each educational hospital of Birjand University of Medical Sciences. Thirdly, this study did not evaluate the academic faculty members through the quality of clinical education. It is suggested to investigate the aforementioned issues in future studies.

### 5.1. Conclusions

It can be concluded that higher clinical education quality leads to higher levels of academic satisfaction among medical students. Therefore, this issue requires continuous revisions of the clinical education curriculum and adherence to improve its outcomes.

### Footnotes

**Authors' Contribution:** Study concept and design: R. D. and Y. M.; acquisition of the data: S. M.; analysis and interpretation of the data: Y. M.; drafting of the manuscript: A. M.; critical revision of the manuscript for important intellectual content: A. M.; statistical analysis: Y. M.; administrative, technical, and material support: R. D.; study supervision: R. D. All the authors read and approved the final manuscript.

**Conflict of Interests:** The authors have no competing interests to declare.

**Data Reproducibility:** The dataset presented in the study is available on request from the corresponding author during submission or after publication. The data are not publicly available due to the present study's policy.

**Ethical Approval:** The Ethics Committee of Birjand University of Medical Sciences approved the protocol of this survey (code: IR.BUMS.REC.1398.099).

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**Informed Consent:** All the respondents gave informed consent.

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