

Evaluating the clinical quality of departments as viewed by juniors and seniors of Shiraz dental school

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ABSTRACT

Introduction: Assessment of students' perspective is an essential element in effective educational quality evaluation. By identifying strengths and weaknesses, it leads to improvement in future performance. **Methods:** This cross-sectional study was performed through a questionnaire comprising 23 questions. Reliability was assessed using α -Chronbach ($\alpha = 0.87$), and validity was confirmed by a group of five experts. Tukey test, Pearson correlation coefficient, and two sample *t*-tests were used for data analysis. **Results:** A total of 168 answered questionnaires were entered in our study. Maximum satisfaction in most items was shown in removable prosthodontics and orthodontics departments whereas oral surgery and comprehensive treatment departments acquired the least scores. In all departments, personnels' respectful attitude had the highest score whereas minimum grade was given to stressful workload and overall satisfaction in each department. In comparison with a similar study, conducted 3 years ago, level of satisfaction was raised for orthodontics and removable prosthodontics departments though it was declined for the pediatrics department. **Conclusion:** The special cadre of clinical instructors comprising both experienced and young members is considered as an important factor leading to high student satisfaction in the orthodontics department. Promotion of a removable prosthodontics department is related to the high relevance between the implemented educational program and the curriculum. The moderate performance of oral surgery and restorative departments is indicative of the need for more attention from ministry authorities to major dental departments such as oral surgery, endodontic, restorative and periodontics, in order to increase the students' scientific capability in these fields.

Key words: Dental students, educational quality, evaluation

INTRODUCTION

Clinical professions are often concerned not only with knowledge acquisition, but also with achievement of skills and their application.^[1]

In clinical dentistry, the ultimate goal is to acquire the essential skills, so students must become familiar with the pattern of clinical skills and an appropriate condition should

be provided for their education and improvement.^[2,3] Proper acquisition of clinical skills requires time, patience, and practice in a proper context.^[4] Since medical and dental schools have the duty of training students to become dedicated and skilled workforce, its profound impact and significant role in providing health care cannot be overemphasized.^[5] Clinical training of dental students directly affects the health and treatment of oral and dental diseases in the society;^[6] therefore, not only is the students' motivation and effort effective in their learning process, but also presence of experienced and caring educators together with the existing

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facilities in each department has a significant role in their education.^[7]

Since assessment of the students' perspective is one of the necessary elements of effective educational quality evaluation, the results obtained from evaluating the qualitative and quantitative status of the departments via assessing students' viewpoints in clinical courses better helps to identify the strengths and weaknesses associated with each department.^[8] Therefore, awareness of the level of students' satisfaction or dissatisfaction from the teaching methods implemented in each department is a determining factor in the improvement of future performance in different departments.^[9] So far, a variety of researches have been done, working on different methods for creating learning motivations among students, evaluating the performance of both students and instructors and assessing academic competence of the learners.^[7,10-12] Ghapanchi *et al.* examined the level of patient satisfaction at Shiraz Dental School and the results suggest that although the majority of patients were pleased with the delivered services, there are still weaknesses in the fields of students' practical skills, pain control, and the ability to communicate with patients.^[11] Furthermore, a number of surveys evaluating the training of practical skills were conducted at Qazvin and Esfahan University of Medical Sciences.^[13,14]

With regard to this review, the students' and trainers' views, which are considered as the main elements of clinical education, could have an effective role in clarifying the strengths and weaknesses of the clinical environment and educational planning. As a result, assessing students' and trainers' views could be helpful in improving the quality of education. This investigation was aimed at assessing the status of clinical education as viewed by the students of Shiraz Dental School.

METHODS

In this cross-sectional survey, a questionnaire consisting 23 standardized questions, 17 questions numbered 0–4 and 6 questions numbered 0–5 according to the Likert scale, was used. All the juniors and seniors of Shiraz School of Dentistry were invited to complete the questionnaires. Among the collected forms, 168 completely filled questionnaires were entered in our study for evaluation. Demographic information included the students' year of entrance in dental education and his/her total average grade. The questions were categorized into four subgroups to evaluate the students' perspective in the following four areas:

- Level of knowledge among the academic staff
- Attitude of clinical faculty members and that of the personnel toward the students
- Clinical facilities
- Overall students' satisfaction in each of the 11 departments.

All the items in the questionnaire were constructed and standardized in terms of validity and reliability. Reliability was assessed using α -Chronbach ($\alpha = 0.87$). Face and

content validity were confirmed by a group of five experts including an orthodontist, a specialist in restorative dentistry, an endodontist, a general dentist and an education expert.

Questionnaires were evaluated in terms of the year of entrance (5th and 6th year) and total average grade (grade <17/20, grade \geq 17/20).

Statistical analysis

This study was conducted using SPSS version 17 (Chicago, IL, USA) for statistical analysis. Tukey test, Pearson correlation coefficient, and two sample *t*-tests were used.

RESULTS

A total of 168 fully completed questionnaires were entered in our study. In all items including proper time planning, presence of a regular educational program in each department, relevance between the contents of theoretical lessons and practical courses, mastery in providing theoretical as well as practical training programs, quality and quantity of the equipment, and overall students' satisfaction from each department maximum satisfaction was shown in removable prosthodontics and orthodontics departments whereas minimum satisfaction was scored to oral surgery and comprehensive treatment departments [Figure 1, Tables 1 and 2].

In the majority of items including educators' supervision and guidance over students' performance, respecting the principles of infection control by both the clinical educators and the personnel and mastery of students in practical skills, removable prosthodontics and orthodontics departments obtained the highest scores whereas lowest score levels were related to comprehensive treatment department [Table 2].

In all the departments, personnels' respectful attitude toward the students had the highest score whereas minimum grade was given to stressful workload and overall satisfaction in each department [Table 1].

There was no significant correlation between year of entrance in dental education (5th and 6th year) and average satisfaction scores ($P = 0.126$) [Table 3].

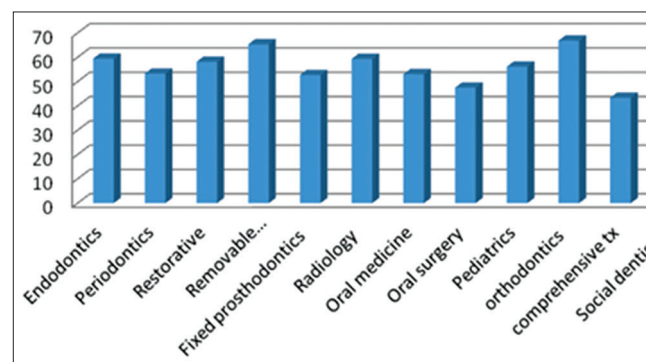


Figure 1: Comparison of average clinical quality scores of different departments

Table 1: Comparison of scores among different departments of Shiraz School of Dentistry

Questions	Departments										
	Comprehensive dentistry	Orthodontics	Pediatrics	Surgery	Oral medicine	Radiology	Fixed prosthodontics	Removable prosthodontics	Restorative Periodontics	Endodontics	
1. Students' expected tasks are clearly defined	2/03	2/97	2/75	1/93	2/10	2/71	2/51	3/02	2/71	2/51	2/92
2. Students are properly motivated by their instructors	1/89	2/93	2/55	1/68	2/05	2/73	2/11	2/87	2/15	2/03	2/42
3. Educators' effort for understanding and solving students' problems (either in theory or clinical courses)	1/93	2/98	2/37	1/71	2/12	2/46	2/13	2/81	2/29	2/06	2/35
4. Educators giving sufficient explanation and respectful response towards the students' questions	2/09	3/05	2/48	2/19	2/40	2/27	2/29	2/97	2/52	2/17	2/50
5. Educators' punctuality for department attendance and proper time management	1/90	2/92	2/40	1/97	2/41	2/59	2/18	2/77	2/48	2/34	2/53
6. Presence of a regular educational program	1/87	2/94	2/44	1/90	2/50	2/64	2/43	2/85	2/52	2/28	2/68
7. Coordination between contents of theory lessons and clinical courses	1/82	2/97	2/50	1/98	2/09	2/71	2/44	2/86	2/48	2/14	2/75
8. The process of teaching leads to development of essential practical skills among students (evident scientific progress in higher levels)	1/89	2/89	2/27	1/29	2/03	2/54	2/13	2/76	2/41	2/03	2/47
9. Applicability of principles taught during preclinical courses (if preclinical courses exist)	1/47	2/75	2/23	1/38	1/77	2/32	2/30	2/70	2/57	1/98	2/59
10. Instructors' scientific knowledge and practical methods implemented are updated on regular basis	1/72	2/71	2/18	1/81	1/97	2/44	2/20	2/57	2/34	2/01	2/33
11. Sufficient instructors' guidance and supervision over students' tasks	1/87	2/84	2/35	2/42	2/11	2/55	2/15	2/78	2/32	2/17	2/45
12. Adherence to principles of infection control by educators and the personnel	1/92	2/93	2/57	2/42	2/50	2/75	2/47	2/76	2/64	2/68	2/69
13. Educators' mastery in providing theoretical as well as practical training programs	1/96	3/01	2/46	2/14	2/49	2/67	2/46	3/01	2/64	2/47	2/66
14. Quality and quantity of equipment and its' availability to all students	1/84	2/87	2/53	2/36	2/41	2/72	2/40	2/78	2/59	2/43	2/50
15. Personnels' appropriate and respectful attitude towards students	2/14	3/26	2/73	2/86	2/82	2/85	2/92	3/20	3/05	2/77	2/95
16. High workload and heavy clinical responsibility causing great amount of stress in students	1/53	2/23	2/01	1/79	1/89	1/90	1/89	2/05	2/09	2/40	2/52
17. Student is generally satisfied with the department	1/92	2/95	2/40	1/75	2/04	2/56	2/08	2/92	2/36	2/02	2/49

Contd...

Table 1 : Contd...

Questions	Departments										
	Comprehensive dentistry	Orthodontics	Pediatrics	Surgery	Oral medicine	Radiology	Fixed prosthodontics	Removable prosthodontics	Restorative	Periodontics	Endodontics
18. In your opinion, to what extent have you acquired the principles of practical skills in each department?	2/02	2/89	2/48	2/10	2/46	2/49	2/11	2/93	2/68	2/36	2/75
19. How far do you feel you have mastered the practical activities carried on in each department?	1/92	2/79	2/50	2/23	2/45	2/48	2/16	2/89	2/70	2/44	2/60
20. Quality of initial demonstration for teaching practical skills	1/83	2/94	2/30	1/75	2/46	2/38	2/19	3/02	2/63	2/30	2/53
21. To what extent have you been able to meet the minimum requirements	1/98	3/01	2/70	2/73	2/84	2/86	2/71	3/09	2/92	2/88	2/90
22. Is there enough time for performing minimum expected tasks?	1/89	3/16	2/51	2/58	2/71	2/79	2/42	2/98	2/67	2/43	2/47
23. Are the minimum requirements sufficient for acquiring essential skills and competency?	1/87	2/76	2/32	2/06	2/32	2/40	1/94	2/65	2/30	2/32	2/32

Table 2: Average score for clinical quality in different departments

Department	Social dentistry	Comprehensive dentistry	Orthodontics	Pediatrics	Oral surgery	Oral medicine	Radiology	Fixed prosthodontics	Removable prosthodontics	Restorative	Periodontics	Endodontics
Average	20/23	43/39	66/59	56/02	47/51	53/05	59/36	52/73	65/35	58/16	53/30	59/46
Standard deviation	27/06	32/73	20/95	24/13	19/60	19/47	22/09	20/17	20/83	19/15	20/37	19/90
Minimum	0	0	0	0	0	0	0	0	0	0	0	0
Maximum	93	98	98	62	91	97	97	94	96	89	92	91

Table 3: Average satisfaction scores among 5th and 6th year students

Year of entrance	Mean	SD	P*
5	52.7882	13.51360	0.126
6	56.1384	12.93324	

*Student's *t*-test. SD=Standard deviation

No significant correlation was reported between students' total average grade and average satisfaction scores from departments ($P > 0.05$).

DISCUSSION

The results showed that the highest level of student satisfaction belonged to removable prosthodontics and orthodontics departments, and the lowest level was scored to the oral surgery and the comprehensive treatment departments. In a study conducted by Janda *et al.* at California University in 1996, the level of newly graduates' expectations from their occupational future was evaluated.^[15] In another survey done by Alvesalo in Finland, the level of patients' satisfaction from the delivery of dental health care services was assessed. The result was 60–94% positive; However, 54% claimed that the fees were too high.^[16] A survey conducted by Shetty *et al.* on 45 dental students in India revealed that >95% of the graduates were satisfied with the curriculum and between 60% and 90% of the students admitted that the various components of teaching-learning process has been adequate. Furthermore, the overall result suggests that despite the fact that educational programs have been satisfactory according to many students, there are still areas of shortcomings and concerns that need improvement.^[17] In a study by Patel *et al.*, students reported that the time spent training the practice of medicine, especially medical economics has been inadequate.

A higher-intensity curriculum in health care systems may hold substantial potential to overcome these perceptions of training inadequacy.^[18]

Amini *et al.* at the Tabriz University of Medical Sciences and Health Services assessed the interns' viewpoints regarding their competency level in performing basic clinical procedures as well as the effect of learning opportunities on their competency level. The results showed that the mean level of skills for the general techniques was 51.4%. Moreover, the students claimed that they have learnt most of the techniques through observation; besides that, most of them performed the procedures without direct supervision of teachers or residents.^[4] Furthermore, the satisfaction of medical trainees and interns from different aspects of education such as educators' performance, medical facilities, training methods, variety and number of the patients, and educational locations at Isfahan University of Medical Sciences was assessed and the results indicated that the highest level of satisfaction was related to outpatient training in health centers, clinical teachers' performance, training methods, and variety and number of patients, whereas the medical equipment and welfare facilities had the lowest scores.^[19] A study conducted

by Zamanzad *et al.* assessed the satisfaction of medical students from quality of education in clinical courses at Shahrekord University of Medical Sciences, and it showed that students were unsatisfied with inadequacy of proper education in teaching rounds, outpatient clinic, and theory courses in major clerkship periods. In contrast, high rate of satisfaction belonged to morning report programs.^[20] In a study conducted by Amanat *et al.* at Shiraz dental school the highest level of satisfaction, regarding clinical teachers and personnels' attitude, was from the pediatrics and periodontics departments and the lowest level of satisfaction regarding the equipment and facilities was from the oral surgery department.^[21] An investigation done at the Mashhad University of Medical Sciences evaluated the acquisition of practical skills among medical students. The results revealed that the existing status of medical students' capabilities is far from the optimal situation. This educational deficit was mostly in essential skills and emergency knowledge for saving patients' lives.^[22] In a study conducted at Qazvin University of medical sciences, in an evaluation of clinical teaching from the viewpoints of residents, interns, and trainees of internal departments, 72.7% of residents, 67.04% of interns and 63.4% of trainees, reported the clinical teaching to be satisfactory.^[23] According to Eslamipour's survey, assessing dental students' satisfaction of clinical departments at Isfahan Dental School, the highest level of student satisfaction belonged to the periodontics and orthodontics departments whereas the lowest score in student satisfaction was given to endodontics and prosthodontics departments.^[13] Borhan-Mojabi also evaluated the dental clinical educational status from the perspective of both the clinical educators and the students at Qazvin University of Medical Sciences.^[14] The results showed that almost half of the students reported good performance of the departments of pediatrics, oral diseases, radiology, pathology and restorative departments, moderate performance of prosthodontics, oral surgery, endodontics, and periodontics departments and poor performance of orthodontics department.^[14]

In this survey, the results indicate that the highest level of overall students' satisfaction is from the removable prosthodontics and orthodontics departments, and the lowest level belongs to the comprehensive treatment and oral surgery departments.

In comparison with a similar study conducted 3 years ago, the level of student satisfaction from orthodontics and removable prosthodontics has increased whereas the level of satisfaction from pediatrics, periodontics, and comprehensive treatment has declined. It could be said that the high performance of the orthodontics department is possibly related to the fact that expectations from the students are being clearly defined; other contributing factors are high accountability of the academic staff, respectful attitude of the personnel toward the students, and different viewpoints among the educators. However, the most important factor is considered to be the presence of skilled and experienced educators along with younger faculty members, indicating a proper management system. The result of this survey is in contrast with Mojaby's

findings which were indicative of poor performance of the orthodontics department.

Moreover, the reason for promotion of the removable prosthodontics department, in comparison with a similar study conducted 3 years ago, could be related to all the previously mentioned reasons besides the coordination and high relevance between the implemented educational programs in the department with the curriculum of the ministry.

The low level of overall student satisfaction from the comprehensive treatment department could be due to recent establishment of the department, insufficiency of the equipment, inadequacy in the number of the faculty members, and lack of enough time for clinical practice. The low scores of the two departments of pediatrics and periodontics could be related to replacement of skilled, experienced educators with the younger less experienced members, poor educational programming and lack of enough motivation among the professors. All of these require more serious attention from the school officials. Also, students' current level of satisfaction from the oral surgery department can be attributed to the improvement in the application of new teaching methods, direct tutors' supervision during and after each procedure, and the altered policy for increasing the number of academic members and the change in the educational program, all of which occurred during the last 3 years.

The low level of satisfaction from the prosthodontics and endodontics departments in other studies,^[13,14] similar to the current study, could be due to the stress and heavy workload, lack of adequate financial resources, and insufficient equipment in these departments. It is worth changing the program of the postgraduate students in a way that leads to their participation in the undergraduate training program. Moreover, the policy of increasing employment of the specialists in these fields should be subject to revision by the university officials.

On the other hand, the reduction in the student satisfaction level from the Pediatrics Department of Shiraz Dental School during the past 3 years might be due to quitting of some of the more experienced faculty members, and this could be the result of some general university policies which requires serious revision.

The moderate performance of the oral surgery and restorative departments, similar to the studies conducted by Eslamipour and Farinaz and Borhan-Mojabi, also demands more attention from ministry authorities to major dental departments such as oral surgery, endodontics, restorative and periodontics, in order to increase the scientific capability of dental students in these fields, which is extremely important in the dental health care system.

CONCLUSION

Regarding the results, the highest level of student satisfaction was from removable prosthodontics and orthodontics

departments and the least amount of satisfaction was from a comprehensive treatment and oral surgery departments. Compared to a previous study conducted 3 years ago, the level of student satisfaction from orthodontics and prosthodontics departments has raised, whereas there has been a decrease in satisfaction for the pediatrics, periodontics, and comprehensive treatment departments.

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Conflicts of interest

There are no conflicts of interest.

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