

Students' Perceptions of Their Education on Graduation from a Dental School in India

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Abstract: This study was conducted with the purpose of assessing students' perceived learning experience at the time of graduation from a dental school in India. The domains appraised were undergraduate curriculum, student motivation and support services, institutional infrastructure, administrative services, components of teaching-learning programs, confidence level in carrying out specific clinical procedures, career choice, and postgraduate specialty preference after graduation. The authors surveyed forty-five dental interns at the end of their undergraduate course, a 100 percent response rate from the class. The results showed that over 95 percent of the graduates were satisfied with the curriculum and 60 to 95 percent reported that the various components of the teaching-learning process were adequate. Only 42 percent of the students were confident about setting up a practice; 65 percent wished to take a course on general dentistry; and 86 percent wanted to pursue postgraduate study. The principal conclusions were that although the program was satisfactory to the majority of participants, some areas of concern were identified that need improvement.

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Curriculum is a constantly changing dynamic process with steady development facilitated through appropriate feedback. An inflexible curriculum is stagnant, whereas a good curriculum always restructures itself to the students', community's, and profession's needs. The dental curriculum is no exception. General needs assessments, needs assessment of targeted learners, feedback from all stakeholders, and planned evaluation of the curriculum are some ways in which curriculum is developed.¹ Although there are several methods to evaluate a curriculum, taking the students' perspective is of crucial importance.² A graduating dental student being the "consumer" of the dental program could give an accurate insider's view of the curriculum, thereby giving a vital pointer towards improvement of the curriculum. Unfortunately, this vital area has been less researched in the majority of dental schools.

Although researchers from several dental institutions have published feedback from students, very few studies have reported summative evaluation of dental education programs on the students' graduation in India.²⁻⁴ Even though there are nearly over 300 dental institutions in the country,⁵ a thorough review of the literature revealed the scarcity of information in answering these important questions. Therefore,

our study was conducted to assess the perception of students at the time of graduation in our dental school, Sinhgad Dental College and Hospital. The domains appraised were undergraduate curriculum, student motivation, student support services, institutional infrastructure, administrative services, components of teaching-learning programs, confidence level in carrying out specific clinical procedures, career choice, and postgraduate specialty preference after graduation.

Methods

A cross-sectional pilot study was employed including all the undergraduate students in our institution who were nearing completion of the B.D.S. (Bachelor of Dental Surgery) course and graduating in the subsequent fortnight. Institutional ethical clearance was obtained. All the students completing the B.D.S. course in the year were invited to participate in the questionnaire study, and all consented to participate (N=45) for a 100 percent response rate.

The domains of the questionnaire were determined by consensus between the two principal investigators. The domains were student opinions

on learning experience in undergraduate curriculum, student motivation and support services, institutional infrastructure, administrative services, components of teaching-learning programs, confidence level in carrying out specific clinical procedures, career choice, postgraduate specialty preference, and suggestions for improvement. We also referred to relevant literature like the Association of American Medical College's 2000 graduation questionnaire⁶ and the Dundee Ready Education Environment (DREEM) inventory^{7,8} to refine our questions.

A total of forty-nine questions were designed, and the final questionnaire was given to three faculty members who suggested modifications for the contents and comprehension; after that, the questionnaire was finalized. The students were given the questionnaire and asked to return it within thirty minutes.

The responses were coded, and the data were analyzed for frequencies and proportions using Microsoft Excel 2003. The qualitative part of the data with open-ended questions was compiled using qualitative research methods of data processing and

has been presented under the domains that developed after the qualitative analysis.⁹

Results

The results revealed an overall positive learning experience in the undergraduate curriculum (Table 1), components of teaching-learning programs (Table 2), and student motivation and support services (Table 3). The components of institutional infrastructure and administrative services (Table 4) also showed positive responses with some areas needing improvements.

The students' confidence level in carrying out specific clinical procedures (Table 5) showed the need for further training in some procedures like fabrication of fixed prosthesis, root canal treatment procedures, process of taking informed consent, and counseling patients for tobacco cessation. Career choice and postgraduate specialty preference are also presented (Tables 6 and 7), as well as respondents' comments and suggestions (Table 8).

Table 1. Opinions about the components of learning experience in the undergraduate curriculum, by number and percentage of respondents to each item

	Agree		Neutral		Disagree		Total Number
I received adequate basic sciences training that prepared me for clinical practice.	42	93.3%	3	6.7%	0	0	45
I had adequate clinical training under personal supervision of faculty.	38	84.4%	7	15.6%	0	0	45
I enjoyed the theory lectures and the method of teaching (overall for all faculty members).	32	72.7%	11	25.0%	1	2.3%	44
Internship is a necessary part of the B.D.S. curriculum for consolidating learning.	45	100.0%	0	0	0	0	45
Internship is an additional burden and is not needed.	1	2.4%	0	0	41	97.6%	42
I am satisfied overall with my B.D.S. training.	43	95.6%	1	2.2%	1	2.2%	45

Table 2. Opinions about the components of teaching-learning programs, by number and percentage of respondents to each item

	Inadequate		Appropriate		Excessive		Total Number
Number of theory classes	0	0	42	95.5%	2	4.5%	44
Duration of theory classes (one hour)	0	0	30	69.8%	13	30.2%	43
Number of patients to whom I provided treatment	1	2.2%	36	80.0%	8	17.8%	45
Number of patients I got to examine	1	2.2%	33	73.3%	11	24.4%	45
Number of clinical sessions	1	2.3%	36	81.8%	7	15.9%	44
Duration of clinical sessions	2	4.4%	41	91.1%	2	4.4%	45
Amount of clinical materials provided	2	4.5%	30	68.2%	12	27.3%	44

Table 3. Opinions about support and faculty members, by number and percentage of respondents to each item

	Agree		Neutral		Disagree		Total Number
	Number	Percentage	Number	Percentage	Number	Percentage	
I received adequate personal counseling from faculty members when sought.	35	81.4%	6	14.0%	2	4.7%	43
I received adequate encouragement when my performance was not up to the mark.	29	65.9%	13	29.5%	2	4.5%	44
I found here a faculty member whom I consider an ideal dentist.	35	77.8%	8	17.8%	2	4.4%	45
I found here a faculty member whom I consider an ideal teacher.	39	86.7%	6	13.3%	0	0	45
At least one faculty member highly motivated me for pursuing my future aspirations in dentistry.	40	88.9%	5	11.1%	0	0	45

Table 4. Opinions regarding infrastructure and administrative services, by number and percentage of respondents to each item

	Agree		Neutral		Disagree		Total
	Number	Percentage	Number	Percentage	Number	Percentage	
I was satisfied with the college library.	24	53.3%	13	28.9%	8	17.8%	45
I received adequate support and help from the administrative office.	30	69.8%	10	23.3%	3	7.0%	43
I received adequate support and help from the nonteaching faculty.	29	64.4%	11	24.4%	5	11.1%	45
I was satisfied with the facilities in the hostel.	8	20.0%	15	37.5%	17	42.5%	40
I was satisfied with the availability of food on campus (mess and others).	15	34.1%	10	22.7%	19	43.2%	44

Table 5. Confidence in carrying out specific clinical procedures, by number and percentage of respondents to each item

	Not Confident		Neutral		Confident		Total Number
	Number	Percentage	Number	Percentage	Number	Percentage	
Dental extractions	0	0	10	22.2%	35	77.8%	45
Restorative care	1	2.2%	1	2.2%	43	95.6%	45
Oral diagnosis	0	0	12	26.7%	33	73.3%	45
Oral radiography	1	2.2%	12	26.7%	32	71.1%	45
Basic periodontal care	0	0	3	6.7%	42	93.3%	45
Fabrication of removable partial denture (acrylic)	1	2.2%	5	11.1%	39	86.7%	45
Fabrication of removable complete denture (acrylic)	1	2.2%	7	15.6%	37	82.2%	45
Fabrication of single unit fixed prosthesis (crown)	10	22.7%	13	29.5%	21	47.7%	44
Fabrication of multiple unit fixed prosthesis (bridge)	19	44.2%	20	46.5%	4	9.3%	43
Root canal treatment of anterior teeth	0	0	1	2.2%	44	97.8%	45
Root canal treatment of posterior teeth	3	6.7%	16	35.6%	26	57.8%	45
Basic management of a child patient	1	2.3%	13	29.5%	30	68.2%	44
Educating a patient for good oral health	2	4.4%	1	2.2%	42	93.3%	45
Method of taking informed consent	2	4.5%	19	43.2%	23	52.3%	44
Counseling a patient for discontinuation of tobacco use	2	4.4%	13	28.9%	30	66.7%	45

Discussion

The perceptions of graduating dental students concerning the curriculum and the motivation and support system are very important. Their opinions on the institutional infrastructure, administrative services, teaching-learning programs, clinical experience, perceived competence in carrying out common clinical procedures, and confidence to open an independent dental practice are also important. We started the study with this critical question: what is the most important change that a graduate recommends in the institution? The results of the study attempt to address this fundamental issue.

The results of the questionnaire show the different dimensions of the learning environment in the institution. Though the results of one dental school may not be representative of all dental schools in the region, the results do give us insights into the possible strengths and weakness of the current curriculum that need to be investigated on a regular and national basis.

Opinions about the components of learning experience in undergraduate curriculum showed an overall satisfaction with the various components of the program like basic sciences, clinical postings, and theory classes. It was heartening to note that the majority of the students found their ideal dentist and ideal teacher in the institution. A positive student-faculty relationship has been found to be crucial for high morale in dental students.⁴ It is a great success for our institution as it seems to be able to provide learners with role models to emulate and follow, possibly helping students to form a motivated and responsible professional identity.

It is necessary to record the students' perceptions of the strengths and weaknesses of the dental education system.² Dental students are the consumers of dental education, and their valuable suggestions constitute important feedback for improving the quality of dental education.⁴ A study about students' perceptions using the DREEM inventory that was conducted in another dental school in our country found that the students perceived the environment as "not congenial."¹⁰ Those students reported that they

Table 6. Confidence about practice management and other future endeavors, by number and percentage of respondents to each item

	Agree		Neutral		Disagree		Total Number
I am confident to set up a general dental practice.	18	41.9%	15	34.9%	10	23.3%	43
I wish to take a course on general dentistry.	28	65.1%	14	32.6%	1	2.3%	43
I wish to take a course on orientation to postgraduation.	32	76.2%	5	11.9%	5	11.9%	42
I feel confident about my future career in dentistry.	29	67.4%	12	27.9%	2	4.7%	43
I feel apprehensive about my future career in dentistry.	7	17.1%	16	39.0%	18	43.9%	41

Table 7. Career choice and preferences for specialties, by number and percentage of total respondents

Specialty	First Preference		Second Preference		Third Preference		Least Preferred	
Public health dentistry	1	2.6%	0	0	0	0	7	16.7%
Pediatric dentistry	5	13.2%	6	15.0%	5	15.6%	3	7.1%
Periodontics	5	13.2%	7	17.5%	5	15.6%	4	9.5%
Prosthodontics	1	2.6%	6	15.0%	7	21.9%	8	19.0%
Oral medicine and radiology	0	0	2	5.0%	0	0	4	9.5%
Conservative dentistry and endodontics	13	34.2%	8	20.0%	7	21.9%	0	0
Orthodontics	7	18.4%	6	15.0%	2	6.3%	3	7.1%
Oral pathology	1	2.6%	0	0	0	0	3	7.1%
Oral surgery	5	13.2%	5	12.5%	6	18.8%	10	23.8%
Total number	38		40		32		42	

Note: Forty-three interns responded to the question about whether they wanted to pursue postgraduate study: thirty-seven (86 percent) wanted to and six (14 percent) did not. Percentages may not total 100% because of rounding.

Table 8. Suggestions for improvement and additional comments

Topic Area	Suggestion/Comment
Theory classes	Demonstrations and practical are more preferable than theory. More slide shows, demonstrations, and case presentations are required. Should be a lot more interactive.
Clinical training	Many departments imparted good clinical training. Some improvement needed for better personal supervision; more interest from faculty in demonstrations.
Internship as part of curriculum	Internship is necessary: we learned a lot during internship. It develops strong confidence, and it is golden days of B.D.S. Nonclinical postings need to be reduced, and there is need for more elective postings.
Suggestions for faculty	All students should be equally treated without favoritism.
Overall feeling about curriculum	I am proud to be a student of this institution.
College library	Many students commented on this aspect and expressed need for additional reference books and journals, need to increase duration of issue and number of books issued, and reduce amount of fine for delayed return. Students demanded increased duration (to be open up to midnight) and improvements needed to the facility.
Nonteaching faculty	Good support from nonteaching faculty was present only in some departments. Need for improvement in interpersonal behavior and punctuality was identified.
Hostel and accommodation	Improvements were suggested in rules and regulations, cleanliness, entry time, and provision of hot water. Need guest room for parents.
Food on campus	Suggestions in relation to mess food sought improvement in quality, quantity, and variety. It was felt that mess should not be compulsory.

viewed teachers as authoritarian. This perception was not evident in our institution as most of the students viewed most of the teaching-learning programs as appropriate. Students enter the dental school with high expectations, and sometimes the actual perceptions do not reach the expected levels.¹¹ Educators need to be sensitive to this matter.

Other components of teaching-learning programs also received approval from the students. Their constructive suggestions revealed that they preferred lectures of about forty-five minutes' duration over the existing one-hour lectures. Also, the students expected more interactive methods, more demonstrations, and overall a more practical approach to learning than they are currently receiving. This need for change in teaching-learning methods is consistent with the opinion of medical educators who support more interactive sessions to foster an active learning process.¹²

Bringing about a change in current teaching-learning methods is currently based on recommendations of a board of studies at the university level and is based on the prescribed curriculum by the Gazette notification by the government of India¹³ that is subsequently implemented by notifications of the Dental Council of India. There is a need to incorporate a need-based curriculum, in which the

curriculum development process involves the needs of students, the community, dental clinicians, and dental researchers. Additionally, an overwhelming majority of the students agreed that an internship is a necessary part of the curriculum. This supports the recent decision by the Dental Council of India to go back to a curriculum in which an internship is a part of the program.¹³

Components of institutional infrastructure appraised in the survey reflected a great need for improving the library, food, and accommodations as less than 35 percent of the students reported satisfaction with these facilities. Previous reports have pointed out the importance of having comfortable living environments and an adequate number of books in the library as a prerequisite in fostering an academic environment and research culture in the institution.¹⁴

One important finding of our study is the self-perceived competence of the dental interns in performing routine clinical procedures and their confidence for opening a dental practice. Self-perceived competence of the interns regarding restorative care, basic periodontal care, fabrication of removable dentures, root canal procedures of anterior teeth, and education of patients were considered excellent as more than 80 percent were confident about carrying out those procedures. Dental extractions,

oral diagnosis and radiography, and fabrication of single-unit bridges are areas of concern as fewer than 80 percent of the respondents were confident in these procedures.

In our study, fewer than 60 percent of graduating students were confident in performing important clinical procedures like root canal treatment of posterior teeth, fabrication of fixed prosthesis, and method of taking informed consent. In a similar study on the competence of dental students, the authors categorized as “poor and of major concern” when fewer than 60 percent of students were confident in carrying out a procedure. It should also be noted that self-reported competence is usually overestimating the level of competence. The study conducted by Yusof et al.¹⁵ found that employers rated the graduates lower than what the graduates rated themselves on all items of competence. Similar findings were reported from another study in which the self-assessed competence level was overestimated by graduates when compared to the assessment of employers.¹⁶

The lack of competence in performing important clinical procedures like root canal treatment of posterior teeth and placement of fixed prosthesis is of great concern as these are the most common treatment needs in our population.¹⁷ This is consistent with the existing curriculum that focuses mainly on restorative dentistry and removable prosthesis procedures. This is also supported by the fact that only 41 percent of the students were confident about starting a dental practice after graduation. This emphasizes the fact that our dental school should earnestly revise the current curriculum and consider the competency-based education system that is the norm in many dental schools elsewhere in the world.¹⁸ A study of West Australian dental graduates found that most perceived themselves to be prepared, competent, and confident to practice as dentists.³

Since the existing curriculum does not accommodate these aspects, there is a need to introduce general dentistry as a course that could be taken by students to improve their clinical skills. Such a course could also be offered as a postgraduate program.¹⁹⁻²¹ A majority of the dental graduates in our study agreed that they would “seriously consider” taking a general dentistry course if it were offered to them. There is a great need to develop such courses that could be taken immediately after graduation or at a later date as part of continuing professional development.

Also, it was very disturbing that only 52 percent of the students were confident about informed consent procedure. Taking informed consent is of

vital importance to all practitioners, and lack of competence in this area is to be taken very seriously by dental educators. Immediate and tangible efforts are needed in improving this competence in our graduates. It was also noted with concern that only about 65 percent of our graduating interns were confident about counseling a patient to quit using tobacco. Tobacco consumption is a major problem in our population, and advice by dentists can help patients quit using tobacco. This is another area that dental educators need to take into serious consideration. Also to be noted is that only about 65 percent of our students reported being confident in treating child patients. This problem also demands further study. Clinical components of orthodontic procedure, clinical implantology, and geriatric dentistry also need to be incorporated into our current curriculum.¹³

An overwhelming majority of the respondents in our study expressed a wish to pursue postgraduate study and also said they would consider taking an orientation program for postgraduate courses. This is an area of priority for the institutional authorities to offer such courses and design them based on needs of the students and society.

Limitations of our study were that the student perceptions alone may not be completely adequate to assess some of the components in the questionnaire like clinical competence since self-perceived competence often falls short of expected competence.¹⁵ Since our study was on the students’ perspective, we did not consider seeking the opinions of other stakeholders involved. We restricted our study to our institution and one class for this pilot investigation; thus, the number of participants was low. A larger multischool study has been planned as there is a need to conduct the study on a larger scale involving more institutions in the region for a representative sample of the nation. Further studies are required in recording the perceptions of faculty, administrators, parents, patients, and other stakeholders for some aspects surveyed in our questionnaire.

Conclusions

The study successfully identified the strengths of the current curriculum like the approval of current teaching programs, student motivation and support, and postgraduation aspirations. Some areas of concern were identified such as infrastructure facilities, clinical resources, and self-perceived competence in performing clinical procedures and setting up an

independent dental practice. We hope our study will encourage other researchers to carry out such surveys in their own dental institutions in order to monitor and improve dental education.

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