

REVISION OR REFORM. WHAT IS YOUR CHOICE? A SURVEY ON CURRENT STATUS AND FUTURE CHANGES OF UNDER GRADUATE DENTAL CURRICULUM IN INDIA.

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Abstract

Objective: To assess the opinions of dental teaching faculty in dental colleges of Andhra Pradesh on current status and future changes of under graduate dental curriculum. **Material and methods:** A cross-sectional Survey was conducted on all the dental teaching staff in 20 dental colleges of Andhra Pradesh. 25 Statements on current status and future changes expected in the dental curriculum were adapted from previous studies and used to construct a self-administered questionnaire. For each statement, response was requested on a 5 point Likert scale. The obtained data were analyzed using descriptive statistics **Results:** 66.9% respondents agreed to the statement that present curriculum is competent enough to undertake the health care needs of the public. 90.8% agreed that curriculum involves memorization of the subject rather than logical thinking. 40.2% disagreed that curriculum is making efficient use of faculty; while 78% respondents agreed that curriculum does not allow application of theory to practice. Almost all the respondents (96.1%) agreed that eliminating outdated and peripheral materials is needed. **Conclusion:** From this survey, statements that were agreed upon by faculty could serve as the basis for a core set of statements to revise and make future changes in the dental curriculum.

Key words: Dental Education, Dentistry, Graduate, Dental, Students

INTRODUCTION

The primary mission of dental college is to produce an entry-level general practitioner who has the capacity to function independently without supervision. The foundation of professional practice is the application of thought processes that allow dentists to recognize pertinent information in a patient's presentation, make accurate decisions based on deliberate and open-minded review of available options, evaluate outcomes of therapeutic decisions, and assess their own performance¹.

Dental students should have clinical experiences that simulate the requirements of general dental practice². Another requirement would be student examinations both as the classic tool to evaluate student's ability and, indirectly, as a means of verifying the competence and effectiveness of the mentor as a teacher of the approved course content³.

Bottom up approach has been the standard operational model for 20th-century higher education. In bottom-up planning, certain pre-matriculation courses are accepted by tradition as being suitable prerequisites for entry into the professional program. This approach uses stepwise curriculum including basic science, behavioral science, and clinical disciplines training students independently with no planned cross-fertilization. Students were held to completing a given number of dental procedures as evidence of achieving competence. Unfortunately, under such a system, the student's interest and the patient's interest could be conflicting against each other⁴.

Dentists in the 21st century will serve the oral health needs of an increasingly multicultural public.

Accordingly, many patients will enter the dental office with different health care beliefs, motivations, and expectations than those held by previous generations of patients, and providers will experience differences in disease prevalence as the patient pool diversifies⁴.

Thus today's students need to achieve an acceptable level of technical expertise to provide the kinds of dental services all of us are familiar with and for which there is still a genuine public need. At the same time, reasonable extrapolation of conclusions from credible sources project a future in which fewer of the procedures now identified with dental practice will continue to be used. This transformation could easily occur within the practice lives of current students. If such a future materializes, new approaches to oral health care could be so radically different from those now in use that present students will not even have the requisite background to begin to learn the new way of practice. In order to accommodate future disease patterns and demand for treatment while also assuring continuing technical competence for those kinds of dentistry that are decreasing in frequency, significant changes might be considered².

Now the questions arises, is the present dental curriculum able to meet the contemporary and future health needs of the public? Is it able to integrate in the students, the required competencies needed at the time of graduation? Does our curriculum need any revision or reform?

The present study is aimed at analyzing from the perspective of the faculty members in the dental colleges of Andhra Pradesh and Telangana, the current status of the UG dental curriculum and the

future changes needed to improve the same.

MATERIALS AND METHODS

The research design was a cross-sectional descriptive study. The instrument used in this study was a questionnaire. The survey was conducted to assess the opinions of all faculty members in 9 clinical departments of 20 dental colleges in Andhra Pradesh and Telangana, whose email addresses were available.

The questionnaire included details of the responding staff member including name, institution and department and their designation. The questionnaire consisted of two parts. The first part listed 14 statements on current status of the UG dental curriculum. The second part listed 11 statements on future changes considered in the revised curriculum. Statements for future changes expected in the dental curriculum were adapted from the dental education reform agenda introduced in North American dental institutions, by Hendricson and Cohen⁴. Faculties in each department were requested to give opinions to all items. For each statement, a response was requested on a 5-point Likert scale ranged from strongly agree to strongly disagree. At the end of the questionnaire, space was provided for the respondents to give additional comments.

The internal consistency method using Cronbachus Coefficient Alpha was chosen to test the reliability of this questionnaire. The acceptable value was equal to or higher than 0.8. The data collected from pretest population as described previously were analyzed by using computer software program SPSS version 10 to calculate the Cronbachus coefficient alpha.

RESULTS

A total of 173 Completed questionnaires were received from dental faculty for a response rate of 70 percent. Less than half of the respondents (48.5%) recognized that the current curriculum is competent to undertake contemporary and future health care needs, while majority of the respondents (72.8%) recognized the curriculum's ability to cultivate knowledge and skills needed by the under graduates.

According to 50.3% respondents, present method of student's skill assessment is appropriate, while 65.2% respondents ascertained that enough emphasis has been placed on preventive strategies. Regarding the present curriculum promotes memorization rather than logical thinking, 60.6% faculty responded positively. More than half of the faculty concurred that the current curriculum is overloaded (54.6%) and creates more stress on students (54.9%). However, only 45.6% respondents suggested that the curriculum needs a change.

According to the respondents, barriers for implementing the reforms in dental curriculum were, Lack of resources (68.7%), Lack of Working hours for staff (5.2%), Cost of dental education (2.8%) , Lack of Faculty (1.7%). More than half of the respondents (56.6%) suggested that the curriculum should be redesigned to incorporate competency-based learning principles and evaluation methods.

The second component of the questionnaire dealt with future changes needed in the dental curriculum (Table 2). Clinical decision making should be revitalized with evidence-based approaches as ascertained by 61.8% respondents. Respondents also gave more

positive response towards inclusion of experience in final year that replicates comprehensive care environment of the general dental practitioner and rededicating the dental colleges for serving oral health needs of patients rather than viewing patients as educational material for students (80.2% and 52% respectively).

DISCUSSION

Considering the advances in the twenty-first century, newer techniques, scientific understanding of disease processes and prevention, and the evolution of molecular medicine must be integrated into the traditional dental curriculum. To deal with changing dental needs, the dental curriculum should search for new model in providing dental education.⁵

The outcomes collected in this study were the opinions of the statements in domains covering current status and future changes anticipated in the undergraduate dental curriculum. Faculty is the most appropriate group of dental educators to give opinions for the study as they have direct responsibility in teaching dental students. Most of the faculty is responsible for providing clinical experiences for their undergraduates.

The questionnaire in the present study was adapted from the similar study done in dental schools in North and South Americas. The underlying concept was that the responsibilities of the general dentists should be quite similar all over the world. And the curriculum of dental schools in any country should be such that, they meet the needs of the people. What would be differences were the priorities or the emphasis that should be depended on context and society. Therefore, the existing curriculum statements from the western

country could be suitable for Indian people.

Looking through the quantitative data of the results, it might be generally concluded that faculty members responded positively towards all the statements on current curriculum status given in the questionnaire except that the present method of student skill assessment is appropriate and curriculum is overloaded and it creates more stress on students.

It might be generally concluded that faculty members agreed with all statements on anticipated changes in curriculum given in the questionnaire. The top 5 statements which were agreed upon by faculty were,

- Use information technology to enrich student learning.
- Organize group practice teams to promote continuity in faculty-student relations and group practice teams
- Increase use of community-based clinics as training sites for students.
- Decompress curriculum by eliminating outdated and peripheral material.
- Increase educational collaboration between dentistry and other health professions

This finding is consistent with that of a study by Eli M. Whitney et al ⁶, where these statements were highly rated by faculty and students and in a study by Kassebaum et al.³ New knowledge will continue to occur at unprecedented rates and future advances will be made possible through emerging interdisciplinary collaborations. Thus, significant curricular changes will be necessary to educate a new group of dental professionals who will

effectively use interdisciplinary research findings to solve clinical problems and apply new technological advances to the oral health environment.

In the present study, the fact that 56.6% respondents suggested that the curriculum should be redesigned to incorporate competency-based learning principles and evaluation methods is consistent with that of Eli M. Whitney et al⁶ and also Kassebaum et al³, who reported that some (35.7%) dental schools were already implementing this innovation while few (14.3%) academic deans planned to implement it in near future. Faculty in the present study recommended competency-based curriculum, a different model from the discipline-based model currently used.

Respondents in our study agreed for students should be exposed to patients, their oral health and systemic medical problems from the first year of the curriculum. Similar studies conducted by Eli M. Whitney et al⁶ and Kassebaum et al³ also reported that, academic deans agreed for student exposure to patients and the clinical environment. It appears to be a high priority for many faculties. This innovation can facilitate patient-centered care and lead to increased productivity.

According to 61.8% respondents, curriculum needs more evidence-based approaches, which is consistent with the findings from Eli M. Whitney et al⁶ and Kassebaum et al³. Faculty and students must become sophisticated consumers of research and utilize scholarly approaches to evidence-based models in their clinical patient management. This fills the gap between what the student learns and what they really practice.

Eli M. Whitney et al⁶ and Kassebaum et al³ reported that academic deans of dental schools agreed to create comprehensive care experiences, which are similar to the response from majority of the faculty (58.3%) in the present study, who also suggested rededication of dental school clinics for serving the oral health needs of the public.

In this study, the result of the rating scale only indicated the level of the agreement to the proposed statements. The different levels of the agreement would depend on many reasons or perspectives of the responders, which could not be clearly identified by the design of the study. The scope, the simplicity, the practicability of the proposed statements and the experiences of the respondents might have influenced their opinions.

Our study gathered opinions only from the teaching dental faculty who were on the producing side. This would be the limitation of this study as dental practitioners are valuable sources for ensuring that a curriculum meets dental needs of the society because, what dentists do in practice might not be the same as the theory they have learnt.

This study results help to explain the current structure of UG dental curriculum, improvements expected, from the perspective of teaching dental faculty. New dental curriculum in future could produce with graduates who could be better equipped to address the varying dental needs of population.

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Table 1: Opinions of Dental teaching staff on the current status of Undergraduate dental curriculum

	STATEMENT	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
1	Competent enough to undertake the contemporary and predicted future health care needs of the public	18.4%	48.5%	2.5%	30.6%	0%
2	Able to cultivate the knowledge, skills, and professional values that a student should possess at the time of graduation	9.2%	72.8%	4.0%	11.5%	2.5%
3	Learning experiences provided by the curriculum enhance the students to acquire the competencies	10%	53.7%	12.7%	23.6%	0%
4	Present method of student's skill assessment is appropriate	1.1%	38.3%	10.9%	49.7%	0%
5	Placed sufficient emphasis on preventive strategies	1.3%	35.8%	29.4%	31.2%	2.3%
6	Provides multidisciplinary alliance and sufficient biomedical knowledge for prevention/treatment of dental diseases	2.3%	45.6%	6.3%	41.8%	4.0%
7	Curriculum involves memorization of the subject rather than logical thinking	30.2%	60.6%	1.1%	8.1%	0%
8	Faculty need training for different roles to face the future changes in dental curriculum	15.2%	68.5%	5.6%	10.7%	0%
9	Curriculum is making efficient use of faculty	10.9%	29.4%	20.5%	37.5%	1.7%
10	Curriculum is overloaded	2.8%	14.4%	25.4%	54.6%	2.8%
11	Creates more stress on students	2.8%	16.7%	23.3%	54.9%	2.3%
12	Curriculum does not allow application of theory to practice	34.1%	43.9%	1.7%	19.2%	1.1%

TABLE 2: Opinions of dental teaching staff on future changes of under graduate curriculum on a likert scale

	STATEMENT	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
15	Redesign curriculum to incorporate competency-based learning principles and evaluation methods.	43.4%	56.6%	0%	0%	0%
16	Decompress curriculum by eliminating outdated and peripheral material.	32.9%	63.2%	1.1%	2.8%	0%
17	Increase educational collaboration between dentistry and other health professions	37.6%	62.4%	0%	0%	0%
18	Redirect basic science coursework toward disease pathophysiology taught by problem-based techniques.	33.5%	58.5%	6.9%	1.1%	0%
19	Expose students to patients' oral health and systemic medical problems from first days of curriculum.	12.7%	58.9%	2.8%	22.58%	2.8%
20	Revitalize science of clinical decision making with evidence-based approaches.	34.6%	61.8%	3.6%	0%	0%
21	Organize group practice teams to promote continuity in faculty-student relations and group practice teams	21.9%	68.2%	9.9%	0%	0%
22	Increase use of community-based clinics as training sites for students.	23.6%	65.7%	10.7%	0.05%	0%
23	Include experience in final year in that replicates comprehensive care environment of the general dental practitioner.	21.9%	58.3%	19.8%	0%	0%
24	Use information technology to enrich student learning.	29.4%	69.3%	1.3%	0%	0%
25	Rededicate school clinics to serving oral health needs of patients rather than viewing patients as educational material for students	29.6%	52%	18.4%	0%	0%