



A Brief Comparison of Curricula at Dental Schools in India and Malaysia

Dr. Jeevan Matada Basavarajaiah¹, Dr. Leneena Gudugunta², Dr. sathiyavathimahendrakumar³,
Dr. Nandin R ktt⁴, Dr Deepak patil⁵

¹Senior Lecturer, Oral Pathology, AIMST University, Malaysia

²Lecturer, Conservative and Endodontics, AIMST University, Malaysia

^{3,4}Lecturer, Pedodontics, AIMST University, Malaysia

⁵Associate Professor, Oral Pathology, MASHA University, Malaysia

ARTICLE INFO	ABSTRACT
Published Online: 29 June 2018	Purpose/objectives: Day by day dental care is becoming increasingly important globally due to awareness, competition and connectivity of world. So it is important to keep pace with the current curriculum and trends. The purpose of this review is to compare the dental curriculum between Indian and Malaysian.
Corresponding Author: Dr. Jeevan Matada Basavarajaiah _{MDS} , Ph.: 60149033299	Methods: A web search of dental curriculum of Indian and Malaysian dental schools was carried out. The subjects covered during and the number of years required to complete the course were analyzed.
	Conclusion: In India the curriculum is specialty department oriented whereas in Malaysia it is polyclinic based. Early clinical experience to thoroughly map theoretical aspects of learning with practical aspects of dentistry can be incorporated as part of the dental curriculum.
	KEYWORDS: Dental education, Dental Curriculum, Undergraduate, BDS, Dental surgery.

INTRODUCTION

Dentistry is a respected, challenging and rewarding profession¹. Excellent communication skills are absolutely necessary to enable dentists to treat patients effectively. A sound understanding of the biological basis of the oral disease, preventive approaches and care constitute the essential foundation of dental practice.²

In dentistry, the undergraduate course is an initial phase in a direction to provide one with a solid foundation of learning, on which to base one's clinical experience and patient care. This is the most ideal approach to guarantee that the patients get the best care conceivable upheld by strong logical confirmation.^{2,3}

To meet the growing oral health care demands and producing competent dentists with comparable standards of education, inclusion of professionalism, critical thinking, communication skills, computer technology skills and the promotion of skills for lifelong learning takes precedence. The existing model of dental education needs to be analyzed in depth to understand its inadequacies and to restructure it based on sound educational theories.^{3,4}

Dental education is now being transformed from a teacher-centered pattern to a student-centered pattern. In the student-centered pattern, all education-related issues need to be considered to serve the objective of making self-learning

easier. Among these issues, curriculum design is of great importance.⁵

The purpose of this review is to analyze curriculum designs for dental schools in India and Malaysia to evaluate whether dental education is updated according to the current needs.

MATERIALS AND METHODS

Curriculum of Indian dental colleges and Malaysian dental schools were searched online using GOOGLE search engine. Search was done using keywords like dental curriculum in India, dental curriculum in Malaysia, Bachelor of dental surgery India, Bachelor of dental surgery Malaysia, BDS in India and Malaysia. 487000 results were found among which only 16 were relevant for the present review were used. Rest of them contained similar, duplicate or irrelevant information pertaining to the present review.

DISCUSSION

Bachelor of dental surgery (BDS) in India is a 5 years course including 1 year of rotatory internship after the completion of fourth academic year. Whereas in Malaysia though the course is of 5 years it does not include internship and students need to work for 1 year (under government) after completion of 5 years of BDS to practice dentistry.

In Malaysia Final Examination carries 60% of the overall marks obtainable while continuous assessment accounts and other academic activity for the remaining 40% making a total of 100% in that respective academic Year. Therefore it is important to obtain good scores for continuous assessment throughout the year. The 40% for final exams obtained from continuous assessment throughout the academic year, participation in seminars, problem based learning, case based learning, group discussions, clinical case study, maintenance of records , proficiency in carrying out practical or clinical skill or participation in projects and assignments (even) during vacation. These are evaluated objectively and recorded. Academic progress and clinical progress continue to be monitored by continuous assessment throughout that respective year 3, 4 and 5.

In India internal assessment is 10%, Viva voce is 20 % and 70% theory written final exam out of total marks assigned for a subject and separately practical/clinical examinations 90% and internal assessment 10% at end of academic year respectively. A minimum of three internal assessments are held in an academic year and the average of these tests are sent to the University for all the years. Here assessment is limited to written tests. It should relate to other items such as maintenance of records, participation in seminars and group discussions, clinical case study, proficiency in carrying out practical or clinical skill or participation in projects and assignments (even) during vacation. These be evaluated objectively and recorded.^{6,7,8,9,10}

Two examinations are conducted annually at an interval of not less than four to six months. The written examination in each subject consists of one paper of three hours duration and has maximum of 70 marks. Each question paper is of 3 hours duration, carrying maximum marks of 70. There are three types of questions with different distribution of marks which is followed for all the years.^{6,7,8,9,10}. Year wise details of the curricula are discussed below.

BDS Year 1

In Malaysia BDS year 1 assessment consists of continuous assessment and final exam comprising of four theory exams and one Objective Structured Practical Assessment (OSPA). A system of continuous assessment is used in Year 1 to monitor closely progress throughout the four modules. The continuous assessment will be held at end of module 1, module 2 and module 3 followed by final exam at the end of module 4.¹¹

Continuous assessment is based on the formal assessments held at the end of Modules 1-3, combined with work graded during Year 1, such as for problem-based learning tutorials, practical classes and group work.¹²

In India final examination includes three papers as shown in table 1. Final results are calculated based on Theory (University written exam), Viva Voce and Internal assessment (written exams).^{6,7,8,9,10}

In Malaysia final examination includes four papers viz, (1) Oral Biosciences- 1, (2) Anatomy, (3) Physiology and (4)

Biochemistry will be given, along with an integrated OSPA (table 1).¹⁵

BDS Year 2

In Year 2, assessment additionally includes practical work in the dental laboratories, problem-based learning tutorials, laboratory reports of practical work in Pathology and Microbiology, combined with the continuous assessment papers held at the end of Modules 1-3. These assessments will cover the subjects shown below.^{12, 14}

The six parts of the BDS Year 2 Final Examination will take place during the examination period. The final examination subjects are shown in table 2.^{11,13,15}

In India final examination includes four theory and two practical as in table 2. Practical sessions of Preclinical Prosthodontics and Crown & Bridge; and Preclinical conservative Dentistry will be conducted. Theory (University written exam) plus Viva Voce plus Internal assessment (written exams) will give you the final results.^{6,7,8,9,10}

BDS Year 3

BDS year 3 assessment consists of continuous assessment and final exam comprising of five theory exams and one Objective Structured Clinical examination (OSCE). The continuous assessment will be held at end of module 1 and module 2 with OSCE in module 4 followed by final exam at the end of module 4.^{12, 14, 16}

Continuous assessment is based on the formal assessments held at the end of Modules 2, combined with work graded during Year 3, such as polyclinic assessment. Year 3 has 5 examination papers as in table 3.^{12,13,15}

In India Majority of Year 3 is spent providing general patient care with rotational clinical postings. final examination will take for four theories along with practical's for each subject as in table 3. Theory (University written exam) plus Viva Voce plus Internal assessment (written exams) will give you the final results.^{6,7,8,9,10}

BDS Year 4

BDS year 4 assessment consists of continuous assessment and final exam comprising of six theory exams.^{12, 13, 14, 15}

Continuous Assessment is based on the formal written assessment held at the end of Module 2, combined with work graded during Year 4, such as polyclinic assessment, Endodontics competency, advanced conservative competency and community oral health state visit report.^{12,13,14}

The BDS Year 4 Final Examination takes place at the end of Module 4. Oral Pathology- 2, Oral Surgery, Community Oral Health, Paediatric Dentistry, Orthodontics, Clinical Dentistry- 2.^{12,15,16}

In India final examination will take for four theory along with clinical's for each subject (table 4). Theory (University written exam) 70% plus Viva Voce 20% plus Internal

assessment 10% (written exams) will give you the final results.^{6,7,8,9,10}

BDS Year 5

The BDS Year 5 Final Examination will take place at the end of module and during the examination period. It will comprise the following four components:

A. Three papers covering teaching and learning in Module 3 and Module 4 in Dentistry:

i. Clinical Dentistry 3 - covering Advanced Conservative Dentistry, Endodontics, Periodontology, Prosthetics and OSCA, ii. Clinical Dentistry 4- covering Oral Surgery, Oral Pathology, Oral Medicine and OSCA, iii. Clinical Dentistry 5 - covering Paediatric Dentistry, Orthodontics and Law and Ethics and OSCA (table 5).

B. Clinical Management Report Assessment - this component of the Final Examination has two Parts:

i. Clinical Management Report - this report is to be submitted in both hard and soft copy in before the Final Examination. The Clinical Management Report is a summary of the multidisciplinary care given for a patient in the Polyclinic during Year 5 and a reflection on the experiential learning and the delivery of care during the course of treatment.^{12,13,14,15,16}

In India the 5th year comprises of a compulsory rotatory internship (table 5).^{6,7,8,9,10}

CONCLUSION

In India theory (University written exam), Viva Voce and Internal assessment (written exams) will give you the final results, along with practical's/clinical for each subject. In Malaysia the Final Examination carries 60% of the overall marks obtainable in that BDS Year while continuous assessment accounts for the remaining 40% both together will give the final result, but includes only few practical exams among all subjects and no clinical exams except in year 5 which has for all subjects. In India the curriculum is specialty oriented were as in Malaysia they are polyclinic based. Early clinical experience to thoroughly map theoretical aspects of learning with practical aspects of dentistry can be incorporated as part of the dental curriculum. To treat patients effectively excellent communication skills are absolutely necessary for dentists.

REFERENCE

1. Lydia G Katrova. "The Dental Profession in 21st Century, Art or Business - Challenges and Perspectives". EC Dental Science 9.4(2017): 128-131.
2. Lakshmi NidhiRao, Mithra N Hegde, Priya darshini Hegde & Chitharanjan Shetty. comparison of dental curriculum in india versus developed countries. NUJHS Vol. 4, No.2, June 2014, ISSN 2249-7110.
3. Kadagad P, Tekian A, Pinto PX, Jirge VL. Restructuring an undergraduate dental curriculum to global standards – a case study in an Indian dental school. Eur J Dent Educ. 2012 May; 16(2): 97-101.
4. Xu Yan et al. Different study conditions between dental students in China and Japan. Int J ClinExp Med 2015;8(7):11396-11403.
5. Sun H, Yang J, Kawashima N, Li Y, Zhang W, Wang P. A Brief Comparison of Curricula at Dental Schools in China and Japan. J Dent Educ. 2012 Jun; 76(6):765-73.
6. Rajiv Gandhi University of Health Sciences, Karnataka, India: http://www.rguhs.ac.in/courses_rguhs/dental_ordinances/dental_BDS%20CURRICULUM%20_rguhs.pdf Accessed: January 10, 2018.
7. Dental Council of India Revised BDS Course Regulations, 2007, India: http://www.dciindia.org.in/rule_regulation/bds_course_regulation_2007_alongwith_amendments.pdf.
8. Kerala University of Health Sciences, India: http://igids.org/wpcontent/uploads/2015/07/BDS_Syllabus_KUHS.pdf.
9. Dr. NTR University of Health Sciences, India: <http://ntruhs.ap.nic.in/mdsnavigationframe.html>
10. Target study <https://targetstudy.com/courses/bds.html>
11. Asian Institute of Medical, Science and Technology, Malaysia: <http://www.aimst.edu.my/brochures/new/dental-surgery.pdf>. Accessed: January 10, 2018.
12. Asian Institute of Medical, Science and Technology: <http://www.aimst.edu.my/bachelor-of-dental-surgery.php>. Accessed: January 10, 2018.
13. International Medical University, Malaysia: <http://imu.edu.my/imu/wpcontent/uploads/brochure-dentistry.pdf>. Accessed: January 10, 2018.
14. SEGi University, Malaysia: <https://www.segi.edu.my/en/programmes/bachelor-degree/bachelor-of-dental-surgery-fully-accredited-by-mqa>. Accessed: January 10, 2018.
15. University of Science Malaysia, Malaysia: http://www.kck.usm.my/pmsg/academic_DDS.htm. Accessed: January 10, 2018.
16. UNIVERSITI MALAYA, Malaysia: <https://dentistry.um.edu.my/>. Accessed: January 10, 2018.

Comparison of Dental curriculum structure

Table: 1

First year Dental undergraduate studies	
India	Malaysia
1. General anatomy (Head and neck class) including embryology and histology 2. Physiology and biochemistry 3. Dental anatomy and oral histology 4. Dental Materials 5. Preclinical's in Prosthodontics and conservative dentistry.	General anatomy, physiology, and biochemistry Dentistry Oral biosciences Objective structured Practical assessment (OSPA)

Table: 2

Second year Dental undergraduate studies	
India	Malaysia
Covers understanding the pathology of the oral cavity and the principles of diagnosis and treatment. Includes fundamental courses in I general microbiology I general pharmacology, I Dental materials. I Preclinical conservative dentistry I Preclinical prosthodontics.	Dental biosciences Oral biology Oral biochemistry Dentistry Pathology Medical microbiology including Oral microbiology Health and society Pharmacology including dental therapeutics Objective structured clinical assessment (OSCA)

Table: 3

Third year Dental undergraduate studies	
India	Malaysia
Majority of 3 rd year is spent providing general patient care with rotational clinical postings Additionally 3 rd year curriculum includes General medicine General Surgery Oral pathology and oral microbiology Public health dentistry	Oral Pathology- 1 Dental public Health Clinical Dentistry- 1 Medicine Surgery

Table: 4

Fourth year Dental undergraduate studies	
India	Malaysia
Orthodontics & Dentofacial Orthopaedics. Oral Medicine and Radiology. Paediatric & Preventive Dentistry. Periodontology. Oral & Maxillofacial Surgery. Prosthodontics and Crown and Bridge. Conservative Dentistry & Endodontics. Public Health Dentistry	Oral Pathology- 2 Oral Surgery Community Oral Health Paediatric Dentistry Orthodontics Clinical Dentistry- 2

Table: 5

Fifth year Dental undergraduate studies	
India	Malaysia
Compulsory rotatory internship program which covers all branches of dentistry. Inclusion of rural postings to cater to sections of society which might be deprived of effective dental care.	Clinical Dentistry 3 Clinical Dentistry 4 Clinical Dentistry 5 Clinical Management Report Assessment