

# Dental education in Malaysia

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There was only one dental school in Malaysia until 1997 but five new schools have been established since 1998. This review provides information about dental education in Malaysia including; the history of dental education, the current dental school system and curriculum, and dental licensure. There are four public and two private dental schools in Malaysia. High school graduates are required to take the nationwide matriculation entrance examination or the Higher School Certificate (HSC) to apply for a dental degree programme. A five-year dental programme leads to the BDS or the DDS degree. National or state examinations are not required to practise dentistry. Currently, there are approximately 2,500 dentists, with a ratio of 1 dentist for every 10,000 people.

*Key words: Dental education, dental school curriculum, dental licence, dental practice, culture, Malaysia*

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## History of dentistry and dental education

Malaysia is a federation of 13 states and the Federal Territory (Kuala Lumpur) lying in peninsular Malaysia and in the islands of Sabah and Sarawak. The size is 330,000 km<sup>2</sup> and the population is 24 million<sup>1</sup>. Malaysia is a multiracial country with three main ethnic groups; Malay (62.1%), Chinese (29.4%), and Indian (8.0%)<sup>2</sup>.

There are two divisions of dental practitioners in Malaysia. Dental practitioners under Division I are formally trained university dental graduates. Dental practitioners under Division II are informally trained practitioners known as 'registered dentists' who have been practising prior to the Dental Act in 1971<sup>3</sup>. In 1975, there were 505 and 441 dentists in Divisions I and II, respectively<sup>4</sup>. In 2004, there were 2,550 and 74 dentists in Divisions I and II, respectively<sup>5</sup>. This review focuses on Division I dentists.

In the sixteenth century, Europeans began trading in Asia. Trade bases were established, the Malay 'pirate kingdoms' were gradually conquered and Malaysia became a British colony. The British were temporarily driven out by the Japanese during World War II<sup>6</sup>.

The Malay States, Singapore, and sectors of North Borneo remained as British colonies until reorganised as the nation of Malaysia on 16 September 1963. Singapore

left the coalition in 1965 to become an independent city nation. As a result, while Malaysia and Singapore share common educational roots, their systems have diverged since 1965<sup>6</sup>. The earliest dental practitioners were 'traditional dentists' originating from Japan and China. The dental treatment they provided was limited to extraction and prosthetic replacement. Some of them are still practising dentistry today under the Division II dentist registration but they are on the verge of extinction as the last registration was allowed in 1972<sup>7,8</sup>.

Before 1970, Malaysia relied on the small output of dentists from the dental faculty at the University of Singapore but a quota system limited the number of Malaysian students admitted<sup>9</sup>. The first dental school in Malaysia was founded at the University of Malaya in Kuala Lumpur in May 1972. It was a four-year programme resulting in a Bachelor of Dental Surgery (BDS) degree. The first class was comprised of 32 students and the initial classes shared physical facilities at the Faculty of Medicine in the early years. The dedicated Faculty of Dentistry building was officially opened by the then Prime Minister of Malaysia, Tun Hj Abdul Razak bin Datuk Hussein on 19 May 1975. In July 1975, the four-year programme of Bachelor of Dental Surgery was converted to a five-year programme. The University of Malaya currently produces about 80 dentists per year.

This was the only dental school in Malaysia until 1997, although five new ones have been established since 1998. Currently, there are four public and two private dental schools in Malaysia (*Table 1*).

### Dental personnel and dental school entrance examinations

Dental personnel in Malaysia comprise dentists, dental nurses, dental surgery assistants and laboratory technicians<sup>3</sup>. Dental nurses only treat school children 17 years and younger and have a limited scope of practice being allowed to do fillings and simple extractions. Malaysia was the second country in the world, after New Zealand, to have dental nurses treating patients<sup>7</sup>. The Dental Training School of Dental Nurses and Technicians in Malaysia has been training dental nurses since 1950<sup>10</sup>. The workforce in 2004 (for dentists) and in 1998 (for others) was 2,550, 1,403, 987, and 361, dentists, dental nurses, dental surgery assistants, and laboratory technicians, respectively. The numbers of dental surgery assistants in the private sector are excluded<sup>5</sup>.

The number of dentists in Malaysia has increased rapidly. In 1990, the number of dentists was 1,401 and the ratio of dentists to the total population was 1:12,815<sup>4</sup>. By 2004, there were 2,550 dentists in Malaysia, yielding a ratio of 1 dentist for every 10,032 people<sup>5</sup>. In 2004, the number of dentists in the public sector was 1,111 and that in the private sector was 1,439. Among the 2,550 dentists, the number of male dentists was 1,421 (56%), while that of female dentists was 1,129 (44%)<sup>3</sup>. In this review, we focus on dental education.

Applicants to dental schools must have graduated from high school and are required to take a nationwide matriculation entrance examination or the Higher School Certificate (HSC.). No undergraduate pre-dental study is needed prior to entry into dental schools. The dental school programme starts in July each year and the admission process is extremely competitive. Applicants

are required to undergo a medical examination, including being tested for Human Immunodeficiency Virus (HIV), Hepatitis B (HBV), and Hepatitis C (HCV). If the applicant is positive for any of these tests they will be asked to withdraw from the dental course. However, the school will offer the applicant other science-base courses in the university.

Tuition and fees are approximately US\$450 per year for the public dental schools, US\$9,500 for the Penang International Dental College (PIDC), and US\$11,400 for the Asian Institute of Medicine, Science & Technology (AIMST).

### Dental school curriculum

Currently in Malaysia there is no single standard curriculum for all the dental schools. The Ministry of Higher Education and the Ministry of Health have been working together to promote scientifically based dental education. Dental education in Malaysia is now taught in Malay and English.

The Malaysia dental curriculum consists of two years of mainly preclinical didactic and laboratory courses, and three years of mainly clinical training, which is supervised by faculty members. The third-year of the course includes lectures and ward round rotations in a medical hospital as well an introduction to clinical dentistry. Fourth-year students undertake didactic clinical and laboratory coursework. Fifth-year dental students participate mainly in patient care. Didactic and practical/clinical curriculum hours at University of Malaya are 1,304 and 3,426 respectively<sup>11</sup>. The academic calendar of Malaysian dental schools runs from July to April, divided into two semesters of about 18 weeks each. Malaysian dental schools have examinations at the end of each term, conducted by a course director such as a department chair or professor.

At the University of Malaya evaluation of dental students consists of two components. One is the

**Table 1** Dental Schools in Malaysia

University	University of Malaya	National University of Malaysia	University of Science Malaysia	University of Technology Mara	AIMST	PIDC
Establishment	1972	1998	1999	2006	2005	2006
City/State	Kuala Lumpur	Kuala Lumpur	Kelantan	Selangor	Kedah	Penang
Student (Yearly)	80	60	60	30	50	50
Public/ Private	Public	Public	Public	Public	Private	Private
Degree awarded	B.D.S.	D.D.S.	D.D.S.	B.D.S.	B.D.S.	B.D.S.
Master Programs	Yes	Yes	Yes	No	No	No
Ph.D Programs	Yes	No	No	No	No	No
Language of instruction	Malay and English	English	English	English	English	English
Examination	Very competitive	Competitive	Competitive	Competitive	Competitive	Competitive

AIMST: Asian Institute of Medicine, Science & Technology

PIDC: Penang International Dental College

continuous internal assessment by the faculty, which makes up 30% of the whole evaluation, the other is the examination, which makes up the other 70%. Theory examinations may comprise oral or written examinations, which may consist of multiple-choice questions, essay questions, and short answers. For the clinical subjects, clinical examinations are conducted on patients. Oral examinations last for 15 to 30 minutes and involve one to three examiners interviewing the students. Preclinical courses include anatomy, oral biology, histology, physiology, biochemistry, pathology, microbiology, immunology, pharmacology, biostatistics, and dental materials. During the clinical years, subjects taught include dental jurisprudence/ethics, operative dentistry, endodontics, prosthodontics, periodontics, preventive dentistry, orthodontics, oral surgery, paedodontics, anesthesiology, oral radiology, and general dental practice.

Dental school graduates from the University of Malaya, University of Technology Mara, PIDC, and AIMST are awarded a BDS degree, while those from the National University of Malaysia and University of Science Malaysia are awarded a Doctor of Dental Surgery degree (DDS). Class sizes vary from 30 to 80 students and the total number of graduates in 2004 was about 200.

The collective experience of the authors indicates that the Malaysian curriculum content is generally similar to that of the United Kingdom. Further, most of the lecturers and dental specialists in Malaysia were trained in the UK and Ireland<sup>7</sup>. However, there is some uniqueness, for example, the curriculum has more emphasis on the dental public health areas including community and preventive dentistry. A similar finding was reported of the dental curriculum in China<sup>12</sup>.

In Malaysia several postgraduate programmes are available. There is a one-year Master of Dental Science programme (MDS) and a four-year Master in Clinical Dentistry programme (MCLinDent) leading to specialist registration. Masters programmes are clinically oriented, however PhD programmes are also available. The details of the programmes offered at each university are summarised in *Table 1*. Some graduates pursue postgraduate dental education in the UK, Singapore, Hong Kong, USA, Japan, Australia or other countries.

### Dental License and Practice

Malaysia does not employ national or state dental licensure examinations such as the National & State Board Dental Examinations in the USA. All students in Malaysian dental schools receive a degree and dental licensure at the time of graduation. Continuing education courses are not compulsory currently, however there are plans to introduce mandatory continuing dental education requirements in the future.

Private dental health insurance is not common in Malaysia, and there is no government-funded national dental health insurance system. Most adult dental

services are rendered at private practices and its payment system is fee-for-service. The government oral health care budget is inadequate to meet the increasing oral health needs of the population, particularly for treatment of dental caries, periodontal diseases, and dentures. The shortage and unequal distribution of dentists and facilities limit access to oral health services in many parts of Malaysia. Dentists in both public services and private practices are concentrated in Kuala Lumpur, the capital of Malaysia. Access to dental care is particularly difficult in rural areas. In these areas, the government dental service is the main provider of care. This is achieved through public hospitals/ dental clinics, mobile dental squads, the riverine service and the helicopter service. Both adults and children are eligible for publicly funded dental services but the range of services differ. For adults, public dental services offer free tooth extraction, low-cost denture delivery, and emergency oral and maxillofacial surgery services in situations of motor vehicle accidents. For schoolchildren up to age 18-years-old, public dental services offer free dental checkups and treatments.

After graduation dentists must complete three-years of compulsory government service in which they are assigned to locations by the Ministry of Health, although individual preferences are also taken into account. More than 90% of new graduates are assigned to work at dental schools or in public hospitals. In the academic arena, in Malaysian dental schools, after obtaining a postgraduate qualification it usually takes about five years following graduation to be appointed to a senior lecturer's post. Promotion from senior lecturer to associate professor may take another five years. An additional five years may be required to be promoted from associate professor to full professor. Lecturers, associate professors, and professors can all give lectures to undergraduates and be advisors for Masters Degree programme students. Generally only those with PhD qualifications can supervise PhD students.

### Closing remark

This paper reports on dental education in Malaysia. In the past 10 years, the number of dental schools has increased as has the quantity and quality of dentists. The government oral health care budget has been increased to meet the increasing oral health care needs of Malaysian citizens. There is a need for more community oral health care programmes and so oral health prevention and promotion have been prioritised in the dental school curricula. It is expected that the information provided in this review will contribute to a better understanding of international dental education.

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