

A Proposed Curriculum for 5-years BDS Programme in Pakistan and its Comparison with the Curricula Suggested by PMDC and HEC



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In Pakistan, whether to enforce a 4-year BDS course versus a 5-year course, is a matter of debate that warrants multiple deliberations. In USA and Canada, dentistry is 4-year long course but students can apply for admission into dental school only when they have already done 16 years of schooling (i.e. a 4-years of graduate university education is the pre-requisite). On the other hand, In UK & Ireland, students can apply for admission into dental colleges with 12-years of high school education. However, they follow a 5-years BDS programme. Similarly, there is much difference on the emphasis on various subjects taught in the dental programmes. This paper critically appraises the PMDC and HEC advised BDS curricula in Pakistan and suggests an alternative curriculum that is more balanced in terms of subject distribution, assessment and above all contemporary to cater the evolving needs of the dynamic discipline of dentistry.

KEYWORDS: Dental; education; curriculum; Pakistan

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The dental school curriculum varies from institution to institution and country to country but most colleges and universities follow a general structure that is in the first two years of dentistry course, students spend most of their time studying basic biological & biomedical science. They learn the structure and function of the human body and the diseases that can affect it. Then in next 2 to 3 years (depending upon the course is 4 or 5 year-long) there is a gradual transition towards more clinically oriented subjects.¹ The goal is to prepare dental graduates who possess strong knowledge base, right set of skills, and values essential to the practice of safe and ethical dentistry. Moreover, dental curriculum is built around some essential themes that could inculcate attributes such as professionalism, life-long learning and ability to critically evaluate, correlate and synthesize scientific evidence to help the graduate remain current and up-to-date in clinical practice.

In Pakistan, there are 55 recognized dental colleges.² Presently, the Bachelors of Dental Surgery (BDS) course is four-years duration.³ Its existing curriculum is devised by the statutory body of the country, Pakistan Medical & Dental Council (PMDC). However, the institution responsible for other degree awarding courses in the country, Higher Education Commission (HEC) has also

placed a 5-year long curriculum on their website for long⁴, but for various reasons this curriculum has not been made to any use as hardly any institution in the country follows it.

Whether to enforce a 4-years BDS course versus a 5-years programme, is a matter of debate that warrants multiple deliberations. In US and Canada, dentistry is 4-year long course but students there get admission into dental school when they have already done 16 years of schooling (i.e. a 4 years of graduate university education is the pre-requisite). In UK & Ireland, students can apply for admission into dental colleges with 12 years of high school education. However, they follow a 5-years BDS programme. In simpler words, a dental graduate in UK & Ireland is generally three year younger than his North American counterpart. As medical and dental education in Pakistan and India, follow British system of education, 5 thus it's imperative to align our BDS curriculum and assessment methodologies with the prototype so that dental graduates trained in Pakistan don't face challenges when they apply for equivalence or when they go abroad for further education or apply for registration to practice outside Pakistan.

This paper is to critically appraise the PMDC and HEC advised BDS curricula and suggest an alternate curriculum that is more balanced in terms of subject distribution, assessment and above all contemporary to cater the evolving needs of the dynamic discipline of dentistry.

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CRITICAL ANALYSIS AND PROPOSAL

The shortcomings in the PMDC curriculum (table 1) are: Firstly, it's a four year curriculum which needs overhauling as the quantum of knowledge in dental sciences have grown so much in last 40 years that it's not possible to cover the fundamentals of dental sciences in just four

Table 1: Existing curriculum by Pakistan Medical & Dental Council (PMDC)

1 st year	2 nd year	3 rd year	4 th year
General Anatomy incl. Histology & Embryology	General Pharmacology	General Medicine	Prosthodontics
Physiology	General Pathology	General Surgery	Operative Dentistry
Biochemistry	Oral Biology & Tooth Morphology	Oral Pathology	Oral Maxillofacial Surgery
Science of Dental Materials	Community & Preventive Dentistry	Periodontology & Oral Medicine	Orthodontics

Ω As per the state regulation, Pakistan Studies, Islamiat/ Ethics examination to be done at the end of first year.

*Source: PMDC website: <http://www.pmdc.org.pk/>

years. Moreover, the countries from which this four year BDS curriculum was adopted (UK, Ireland and Australia) have already moved to the five year program in late 90's. Thus, it's likely that Pakistan too will follow their foot step and will move to 5-years BDS programme soon. Endodontics is entirely missing as a main subject. It should be specifically mentioned annexed to Operative Dentistry. Oral Medicine is being paired with Periodontology, it should have been synched with Oral Pathology instead. No mention of subjects such as Behavioral Sciences, Ethics, Implant Dentistry, Forensic Odontology etc. Although, Pediatric Dentistry has recently been recommended to be established as separate subject but so far only a few institutions have established its departments. The problem in Pediatric Dentistry teaching and assessment is the post graduate programme and availability of trained faculty.^{6,7}

The limitations of the HEC dental curriculum (table 2) are: An unequal distribution of subjects throughout the length of the course. The final year is over burdened with too many subjects. Periodontology is taught in year 3 and then in year 5, skipping year 4 and not mentioned as which year its examination will be carried out. Similarly, Operative Dentistry is being taught in year 3 and 5, skipping year 4. Pediatric Dentistry is being merged with Operative Dentistry whereas Endodontics is absolutely ignored in the list of subjects. Again, year 4 is skipped for Oral Medicine, Oral Diagnosis & Oral Radiology. These three are clustered as one subject and repeated in year 3 and 5 too. Oral Medicine should have been paired with Oral Pathology to make more

Table 2: BDS Curriculum proposed by Higher Education Commission of Pakistan (HEC)

1 st year	2 nd year	3 rd year	4 th year	5 th year
General Anatomy incl. Histology & Embryology	General Pathology	General Medicine	Prosthodontics	Comprehensive Dental Care
Physiology	General Pharmacology	General Surgery	Orthodontics	Prosthodontics
Biochemistry	Preclinical Dentistry	Community Dentistry	Operative Dentistry	Operative Dentistry & Pediatric Dentistry
Oral Biology & Tooth Morphology	Oral Pathology	Periodontology	Oral Maxillofacial Surgery	Orthodontics
Pakistan Studies, Islamiat/ Ethics	Science of Dental Materials	Oral Medicine, Oral Diagnosis Oral Radiology	Elective Projects	Periodontology
	Behavioral Science			Oral Medicine, Oral Diagnosis Oral Radiology
				Special care Dentistry
				Elective Projects

*Source: HEC website: <https://hec.gov.pk>

sense. Subjects such as Comprehensive Care Dentistry and Special Care Dentistry have been mentioned but there no specialty residency programs in the country to train faculty in these subjects.

The strengths of the curriculum (table 3) proposed in this paper are: Its more balanced in terms of subject distribution, assessment and above all contemporary as it has subjects such as ethics, behavioral sciences, implant dentistry to cater the evolving needs of dentistry. However,

Table 3: Distribution of subjects in the 5-year long BDS course proposed in this paper

1 st year	2 nd year	3 rd year	4 th year	5 th year
General Anatomy incl. Histology & Embryology	General Pharmacology	TMJ, Occlusion & Forensic Odontology	Community & Preventive Dentistry	Oral Maxillofacial Surgery
Physiology	General Pathology	Oral Pathology & Oral Medicine	Oral Radiology & Diagnostics	Endodontics - Operative Dentistry
Biochemistry	Oral Biology & Oral Anatomy	General Medicine	Pediatric Dentistry	Prosthodontics
Dental Materials Science	Ethics & Behavioral Science	General Surgery	Orthodontics	Periodontology & Implant Dentistry

Ω As per the state regulation, Pakistan Studies, Islamiat/ Ethics examination to be done at the end of first year.

there is a question that there are lack of subject expert teachers in few of these disciplines, especially the newly proposed ones. For this, a solution has been proposed for identifying suitable subject teacher and the best alternate while keeping the circumstances of Pakistan dental academia in context. The first two years are preclinical years where student journals can be used for the formative assessment of the student. The third year is a blend of basic and clinical sciences whereas years 4 & 5 will be clinical years focused entirely on dental subjects. In addition to summative

Table 4: Allocation of faculty in subject of expertise and cross-subject allocation

No	Subjects	Primary teaching faculty	*Alternate teaching faculty
1	Dental Materials Science	MDS/ MPhil/ PhD Dental Materials	FCPS- Prosthodontics or Operative Dentistry
2	Oral Anatomy & Oral Biology	MDS MPhil/ PhD Oral Biology	FCPS- Oral Surgery or Operative Dentistry
3	TMJ, Occlusion & Dental Forensics	FCPS Prosthodontics	FCPS Oral Surgery
4	Oral Pathology & Oral Medicine	MDS/ MPhil Oral Pathology	FCPS Oral Surgery
5	Dental Public Health	MDS/ MPhil Community Dentistry	MSc Epidemiology & Biostatistics
6	Oral Radiology & Diagnostics	FCPS Operative Dentistry	FCPS- Oral Surgery
7	Pediatric Dentistry	MDS Pediatric Dentistry	FCPS- Orthodontics or Operative Dentistry
8	Orthodontics	FCPS Orthodontics	MDS Orthodontics
9	Oral & Maxillofacial Surgery	FCPS Oral Surgery	MDS Oral Surgery
10	Endodontics & Operative Dentistry	FCPS Operative Dentistry	MDS Operative Dentistry
11	Fixed & Removable Prosthodontics	FCPS Prosthodontics	MDS Prosthodontics
12	Periodontology & Implantology	FCPS Periodontology	MDS Periodontology

*The alternate teaching faculty would make a shift (short term arrangement) for next 5 years only, once the number of adequate subjects specialist are available, this practice will be permanently stopped.

assessment at the year-end, student log book in each subject could be used as an evidence of competence gained and formative assessment throughout year.

Although a number of deliberations have been made by subject experts and dental educationists at the 1st Pioneer Conference on Dental Education held at the Dental Institute of the Liaquat University of Medical & Health Sciences (LUMHS) Hyderabad, Pakistan on 14-15 November 2014 and at Pakistan Pioneer National Seminar on Dental Education organized by LUMHS held at Governor House Sindh (Pakistan) on 20 February 2015. The outcome of such deliberations have yet to be translated into actions. In conclusion, the limitations of PMDC and HEC templates have been appraised above. However, comparing the two curricula, it seems that PMDC version is more practical compared to what HEC has suggested. In essence, the curriculum proposed here is a modified version of PMDC's existing curriculum. Only fifth year is added, new subjects relevant to international and local practice needs are incorporated and existing subjects are redistributed.

CONFLICT OF INTEREST

None

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