

PAEDODONTICS & PREVENTIVE DENTISTRY

Objectives

At the end of 3 years of training the candidate should be able to

1. Create not only a good oral health in the child but also a good citizen tomorrow.
2. Instill a positive attitude and behavior in children .
3. Understand the principles of prevention and prevention dentistry right from birth to adolescence
4. Guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry
5. Prevent and intercept developing malocclusion

Skills

1. obtain proper clinical history, methodological examination of the child patient, perform essential diagnostic procedures and interpret them. and arrive at a reasonable diagnosis and treat appropriately.
2. Be competent to treat dental diseases which are occurring in child patient.
3. Manage to repair and restore the lost / tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.
4. Manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions.

Attitudes

1. Develop an attitude to adopt ethical principles in all aspects of Pedodontic practice.
2. Professional honesty and integrity are to be fostered
3. Treatment care is to be delivered irrespective of the social status, cast, creed, and religion of the patients.
4. Willingness to share the knowledge and clinical experience with professional colleagues.
5. Willingness to adopt, after a critical assessment, new methods and techniques of Pedodontic management developed from time to time, based on scientific research, which are in the best interest of the child patient.
6. Respect child patient's rights and privileges, including child patients right to information and right to seek a second opinion.
7. Develop an attitude to seek opinion from allied medical and dental specialities, as and when required

Course Contents

1. Applied Anatomy
2. Applied Physiology
3. Applied Pathology
4. Nutrition and Dietics
5. Growth & Development : Prenatal and Postnatal development of cranium, face, jaws, teeth and supporting structures. Chronology of dental development and development of occlusion. Dimensional changes in dental arches. Cephalometric I; evaluation of growth.
6. Child Psychology : Development & Classification of behavior, personality, intelligence in children, theories child psychology, stages of psychological child development, fear anxiety, apprehension & its

management

7. Behavior Management : Non - pharmacological & Pharmacological methods.
8. Child Abuse & Dental Neglect
9. Conscious Sedation, Deep Sedation & General Anaesthesia in Paediatric Dentistry : (Including Other Drugs, Synergic & Antagonistic Actions of Various Drugs Used In children
10. Preventive Pedodontics : Concepts, chair side preventive measures for dental disease, high risk caries including rampant & extensive caries – Recognition, Features & Preventive Management, Pit and Fissures Sealants, Oral Hygiene measures, Correlation of brushing with dental caries and periodontal diseases. Diet & Nutrition as related to dental caries. Diet Counseling.
11. Dental Plaque : Definition, Initiation, Pathogenesis, Biochemistry, and Morphology & Metabolism.
12. Microbiology & Immunology as related to Oral Diseases in Children : Basic concepts, immune system in human body, Auto Immune diseases, Histopathology, Pathogenesis, Immunology of dental caries, Periodontal diseases, Tumors, Oral Mucosal lesions etc.
13. Gingival & Periodontal diseases in Children:
 - Normal Gingival & Periodontium in children
 - Gingival & Periodontal diseases - Etiology, Pathogenesis, Prevention & Management
14. Pediatric Operative Dentistry
 - Principle Of Operative Dentistry along with modifications of materials/past, current & latest including tooth colored materials.
 - Modifications required for cavity preparation in primary and young permanent teeth
 - Various Isolation Techniques
 - Restorations of decayed primary, young permanent and permanent teeth in children using various restorative material like Glass Ionomer, Composites, Silver, Amalgam & latest material (gallium)
 - Stainless steel, Polycarbonate & Resin Crowns / Veneers & Crowns
15. Pediatric Endodontics:
 - a. Primary Dentition: -Diagnosis of pulpal diseases and their management - Pulp capping, Pulpotomy, Pulpectomy (Materials & Methods), Controversies & recent concepts.
 - b. Young permanent teeth and permanent teeth, Pulp capping, Pulpotomy, Apexogenesis, Apexification, Concepts, Techniques and Materials used for different procedures.
 - c. Recent advances in Pediatric Endodontics.
16. Traumatic Injuries in Children:
 - Classifications & Importance
 - Sequelae & reaction of teeth to trauma
 - Management of Traumatized teeth with latest concepts
17. Interceptive Orthodontics :
 - a. Concepts of occlusion and esthetics : Structure and function of all anatomic components of occlusion, mechanics of articulations, recording of masticatory function diagnosis of Occlusal dysfunction, relationship of TMJ anatomy and pathology and related neuromuscular physiology
 - b. A comprehensive review of the local and systemic factors in the causation of malocclusion.

- c. Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children (Occlusal Guidance)
 - d. Biology of tooth movement : A comprehensive review of the principles of teeth movement. Review of contemporary literature. Histopathology of bone and Periodontal ligament, Molecular and ultra cellular consideration in tooth movement.
 - e. Myofunctional appliances: Basic principles, contemporary appliances : Design & Fabrication
 - f. Removable appliances : Basic principles, contemporary appliances : Design & Fabrication
 - g. Case selection & diagnosis in interceptive Orthodontics (Cephalometrics, Image processing, Tracing, Radiation hygiene, Video imaging & advance Cephalometric techniques)
 - h. Space Management : Etiology, Diagnosis of space problems, analysis, Biomechanics, Serial Extractions
18. Oral Habits in Children:
- Definition, Etiology & Classification
 - Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
 - Management of oral habits in children
19. Dental care of Children with special needs:
- Definition Etiology, Classification, Behavioral, Clinical features & Management of children with :
- Physically handicapping conditions
 - Mentally compromising conditions
 - Medically compromising conditions'
 - Genetic disorders
20. Oral manifestations of Systemic Conditions in Children & their Management
21. Management of Minor Oral Surgical Procedures in Children
22. Dental Radiology as related to Pediatric Dentistry
23. Cariology
- Historical background
 - Definition, Aetiology & Pathogenesis
 - Caries pattern in primary, young permanent and permanent teeth in children
 - Rampant caries, early childhood caries and extensive caries. Definition, aetiology, Pathogenesis, Clinical features, Complications & Management
 - Role of diet and nutrition in Dental Caries
 - Dietary modifications & Diet counseling
 - Caries Activity tests, Caries prediction, Caries susceptibility & their clinical Applications
24. Pediatric Oral Medicine & Clinical Pathology : Recognition & Management of developmental dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.
25. Congenital Abnormalities in Children : Definition, Classification, Clinical features & Management.
26. Dental Emergencies in Children and their Management.
27. Dental Materials used in Pediatric Dentistry.
28. Preventive Dentistry :
- Definition

- Principles & Scope
 - Types of prevention
 - Different preventive measures used in Pediatric Dentistry including fissure sealants and caries vaccine.
29. Dental Health Education & School Dental Health Programmes
 30. Dental health concepts, Effects of civilization and environment, Dental Health delivery system, Public Health measures related to children along with principles of Pediatric Preventive Dentistry
 31. Fluorides:
 - Historical background
 - Systemic & Topical fluorides
 - Mechanism of action
 - Toxicity & Management.
 - Defluoridation techniques.
 32. Case History Recording outline of principles of examination, diagnosis & treatment planning.
 33. Epidemiology : Concepts, Methods of recording & evaluation of various oral diseases. Various national & global trends of epidemiology of oral diseases.
 34. Comprehensive Infant Oral Health Care
 35. Principles of Bio-Statistics & Research Methodology & Understanding of Computers and Photography
 36. Setting up of Pedodontic & Preventive Dentistry Clinic.

First Year

Preclinical Work

(Duration -first 6 Months of First Year MDS)

(One On Each Exercise)

1. Carving of all deciduous teeth
2. Basic wire bending exercises
3. Fabrication of
 - a. Maxillary bite plate / Hawley's
 - b. Maxillary expansion screw appliance
 - c. Canine retractor appliance
 - d. All habit breaking appliances
 - I. Removable type
 - II. Fixed type
 - III. Partially fixed and removable
 - e. Two Myofunctional appliance
 - f. Making of inclined plane appliance
 - g. Acrylic inclined plane
4. Basic soldering exercise I -making of a lamppost of stainless steel wire pieces of different gauges soldered on either side of heavy gauge main post.
5. Fabrication of space maintainers
 - a. Removable type -
 - Unilateral Non -Functional space maintainer
 - Bilateral Non-Functional space maintainer

- Bilateral functional space maintainer
- b. Space Regainers -
 - Hawley's appliances with Helical space regainer
 - Removable appliance with Slingshot space regainer
 - Removable appliance with Dumbell space regainer
- c. Fixed Space maintainers
 - Band & long loop space maintainer
 - Band & short loop space maintainer
 - Mayne's space maintainer
 - Transpalatal arch space maintainer
 - Nance Palatal holding arch
 - Nance Palatal holding arch with canine stoppers
 - Gerber space regainer
 - Distal shoe appliance
- d. Active space maintainers
- e. For guiding the eruption of first permanent molar
- f. Arch holding device
- g. Functional space maintainer
- 6. Basics for spot welding exercise
- 7. Collection of extracted deciduous and permanent teeth
 - a. Sectioning of the teeth at various levels and planes
 - b. Drawing of section and shapes of pulp
 - c. Performing ideal cavity preparation for various restorative materials for both Deciduous and permanent teeth
 - d. Performing pulpotomy, root canal treatment and Apexification procedure.
 - e. Tooth preparation and fabrication of various temporary and permanent restorations on fractured anterior teeth.
 - f. Preparation of teeth for stainless steel crowns
- 8. Performing of behavioral rating and IQ tests for children.
- 9. Computation of :
 - a. Caries index and performing various caries activity test.
 - b. Oral Hygiene Index
 - c. Periodontal Index
- 10.
 - a. Taking of periapical, occlusal, bitewing radiographs of children
 - b. Developing and processing of films, thus obtained
 - c. Tracing of soft tissue dental and skeletal landmark is as observed on Cephalometric radiographs and drawing of various planes and angles.
- 11. Library assignment
- 12. Synopsis

Clinical work Requirements from 7 to 36 months

The following is the minimum requirement to be completed before the candidate can be considered eligible to

appear in the final M.D.S Examinations: -

No.	Clinical Work	Total	7 to 12 months	13 to 24 months	25 to 36 months
1	Behavior Management of different age groups children with complete records	17	2	10	5
2	Detailed Case evaluation with complete records, treatment planning and presentation of cases with chair side and discussion	17	2	10	5
3	Step-by-step chair side preventive dentistry scheduled for high risk children with gingival and periodontal diseases & Dental Caries	11	1	5	5
4	Practical application of Preventive dentistry concepts in a class of 35-50 children & Dental Health Education & Motivation	7	1	4	2
5	Pediatric Operative Dentistry with application of recent concepts (a) Management of Dental Caries I) Class I II) Class II III) Other Restorations 100 (b) Management of traumatized anterior teeth (c) anaesthetic Restorations (d) Paediatric Endodontic procedures Deciduous teeth Pulpotomy / Pulpectomy Permanent Molars Permanent Incisor Apexification & Apexogenesis	50 100 20 15 25 20 150 20 15 20	30 40 50 04 05 30 3 2 02	10 50 30 06 10 50 07 03 08	10 10 05 10 70 10 10 10
6	Stainless Steel Crown	50	10	20	20
7	Other Crown	05	01	02	02
8	Fixed Space Maintainers	30	08	12	10
9	Removable Space Maintainers	20	05	07	08

10	Functional Maintainers	05	01	02	02
11	Preventive measures like fluoride applications & Pit & Fissure Sealants applications with complete follow-up and diet counseling	20	08	08	04
12	Special Assignments				
	(i) School Dental Health Programmes	03	01	01	01
	(ii) Camps etc.	02	01	01	

13. Library usage

14. Laboratory usage

15. Continuing Dental Health Programme

(The figures given against Sl. No.4 to 12 are the minimum number of recommended procedures to be performed)

Monitoring Learning Progress

It is essential to monitor the learning progress to each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to , evaluate themselves. The monitoring to be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects. Checklists are given in Section IV