National Academic Reference Standards (NARS)

Dentistry

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1st Edition

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Introduction to Dentistry Education

Dentistry as a part of the healthcare profession is the science and art of prevention, detection, management and treatment of oro-facial and dental disease. It is mainly a clinical discipline with the ultimate goal of maintaining oral, dental and general health in individuals and in the society at large. Dentistry is based on the foundation of knowledge and understanding of basic and medical sciences including Physics, Chemistry, Bioscience, Human Anatomy, Growth and Genetics, Physiology, Biochemistry, Microbiology and Immunology, General Histology, Pharmacology, General Pathology, Internal medicine and General Surgery.

Faculties of Dentistry are required to emphasize the ethical practice and professionalism, high level of communication skills and competence in clinical and technical aspects of dentistry.

The educational environment should inspire students to maintain high professional and personal standards. Lifelong learning in a caring profession should be an integral part of the educational process. The educational environment should also encourage students to develop an analytical approach to theory and practice of dentistry and to stimulate critical thinking. It should also allow students to acquire research methods and skills in the collection, evaluation and presentation of evidence. This form of education provision should allow students to develop an adaptable approach to the practice of dentistry to be able to respond effectively to the individual needs of patients and of the communities they will serve.

An important aspect of dental education should provide the students with a wide range of clinical skills; however, they are not expected to be highly skilled in all clinical procedures. The students should be encouraged to deliver dental care in a team approach concept.

Programs should exhibit a degree of flexibility to accommodate a changing pattern of dental and oral health needs in conformity with the national health policy.

A career in dentistry should not be limited by the fact that the new graduate is trained only as a practitioner. A wide range of careers exists within dentistry itself; presumably dental education nurtures diverse research activities that support dental professionals throughout their careers.

I.National Academic Reference Standards (NARS)

1. Attributes of the Graduates of Dental Medicine

The graduate must be able to:

1.1. Deliver independently oral health care services within the scope of general dentistry
1.2. Provide ethical professional practice including compassion, empathy, integrity, responsibility and tolerance.
1.3. Provide comprehensive practice management encompassing patient assessments, and maintain patient's records in complete and accurate forms.
1.4. Communicate effectively to develop a mature, sensitive and caring relationship with their patients.
1.5. Respond to socio-economic aspects of different communities and engage effectively in community services.
1.6. Maintain a safe and infection-controlled environment.
1.7. Realize the importance of lifelong learning and strive for continuous professional education.
1.8. Recognize the various features of medico-legal aspects of the dental profession.
1.9. Recognize the limitation of their current knowledge and clinical abilities and realize the need for proper referral.
1.10. Evaluate and respond to ongoing dental technology.

2. Knowledge and Understanding

Upon completion of an undergraduate dental program, the graduate must know and understand the biomedical, dental, and behavioral sciences that form the basis of human health and disease including:

2.1. The interrelationship between different systems of the human body.
2.2. The principles of pathogenic mechanisms and manifestations of human diseases which are of dental significance.
2.3. Basis and significance of oral health promotion, nutritional education and prevention of oral diseases in population based approaches.
2.4. Prevention and management of medical emergencies.
2.5. Maintenance of infection control and a safe working environment.
2.6. Basis of practice management.
2.7. Principles of evidence-based dentistry and its relation to scientific research.
2.8. Ethical and medico-legal aspects relevant to the practice of dentistry and research.
2.9. Social and psychological issues relevant to dental care with emphasis on behavioral management.

3. Practical and Clinical Skills

The graduate must be able to:

3.1. Establish a comprehensive patient's history, perform clinical examination, request and evaluate appropriate investigations.

3.2. Review the body systems and consult with other health care professionals, when required.

3.3. Detect abnormal and pathological conditions, as well as etiological and/or risk factors that may contribute to disease process.

3.4. Perform a range of clinical procedures which are within the scope of general dentistry, including:

3.4.1. Applications of preventive procedures.

3.4.2. Application of different local anesthetic techniques.

3.4.3. Extraction of teeth and removal of roots when necessary.

3.4.4. Diagnosis of commonly encountered oral lesions.

3.4.5. Performance of the necessary radiographs.

3.4.6. Performance of non-surgical periodontal treatment and monitor treatment outcomes.

3.4.7. Restoration of carious and non-carious tooth defects with emphasis on basic concepts of esthetics.

3.4.8. Basic endodontic procedures.

3.4.9. Rehabilitation of partially and completely edentulous patients.

3.4.10. Diagnosis and prevention of developing malocclusions.

3.4.11. Basic endodontic treatment.

3.5. Apply current infection control guidelines.

3.6. Control different levels of patient's anxiety and apprehension in different age groups.

3.7. Manage dental and medical emergencies which may occur in dental practice and perform basic life support measures.

3.8. Prescribe and monitor the effects of appropriate pharmaceutical agents taking into consideration drug and patient factors.

4. Intellectual Skills

The dental graduate must be able to:

4.1. Integrate basic biomedical, behavioral and dental sciences with signs, symptoms and physical findings of the disease.

4.2. Differentiate between normal and abnormal features that are particularly relevant to dental practice.

4.3. Identify, prioritize and generate a list of potential patient's clinical problems.

4.4. Analyze, interpret, and integrate collected diagnostic data to solve clinical problems based on current evidence.

4.5. Design appropriate treatment plans for different dental problems.

4.6. Assess and evaluate the effects of medications taken by the patient on dental management.

4.7. Reason deductively in clinical problem solving.

5. General and Transferable Skills

The graduate must be able to:

5.1. Work in collaboration as a member of an interdisciplinary team.

5.2. Communicate effectively in multicultural work environment using verbal and non -verbal means.

5.3. Recognize and effectively utilize all sources for continuing professional development and life–long learning.
5.4. Adopt a creative attitude in an ethical and scientific approach.
5.5. Self evaluate professional abilities, performance, and progress.
5.6. Recognize professional responsibility towards the surrounding community.
5.7. Use information technologies to enrich and diversify professional experience.
5.8. Recognize the basic concepts of quality assurance and practice management.
5.9. Prioritize workload and manage personal stress in the framework of proper performance and management.

II. Curriculum Structure

The percentages mentioned in the following table for each area of study are just a guide for the faculty and not obligatory to follow.

Table 1. Percentages of areas of study

Subjects	Range	Characterization
Basic sciences	28%-32%	*All basic sciences including basic medical and dental sciences.
Medical and Dental sciences A- Didactic B- Laboratory &clinical	 21%-25% 33%-37%	**All dental and medical sciences.
Complementary sciences	5%-8%	Behavioral science Law, Ethics and Professionalism Information Technology
Subtotal		
• Discretionary subjects	6-8%	
Total	100%	

- Allowed to each faculty to use based on its mission

*Physics, Chemistry, Bioscience, Human Anatomy, Growth and Genetics, Physiology, Biochemistry, Microbiology and Immunology, General Histology, Pharmacology, General Pathology,

Oral Biology, Dental Anatomy and Oral Physiology, Dental Biomaterials and Oral Pathology.

** Internal medicine, General surgery, Restorative Dentistry, prothodontics, Oral and maxillofacial Surgery and General Anesthesia, Diagnostic Sciences, Oral Medicine, Oral Maxillofacial Radiology, Periodontics, Endodontic, Orthodontics and Dentofacial Orthopedics, Pediatric Dentistry, Public Health and Community Dentistry

III. Glossary

1. **Institution**
   A University, faculty or higher institute providing education programs leading to a first university degree or a higher degree (Master's or Doctorate).

2. **Graduate Attributes**
   Competencies expected from the graduate based on the acquired knowledge and skills gained upon completion of a particular program.

3. **National Academic Reference Standards (NARS)**

   Reference points designed by NAQAAE to outline / describe the expected minimum knowledge and skills necessary to fulfill the requirements of a program of study.

4. **Academic Standards**

   Reference points defined by an institution comprising the collective knowledge and skills to be gained by the graduates of a particular program. The academic standards should surpass the NARS, and be approved by NAQAAE.

5. **Subject Benchmark Statements**

   Guideline statements that detail what can be expected of a graduate in terms of the learning outcomes to satisfy the standards set for the program. They enable the outcomes to be

compared, reviewed and evaluated against agreed upon standards.

6. The Program

A set of educational courses and activities designed by the institution to determine the systematic learning progress. The program also imparts the intended competencies required for the award of an academic degree.

7. Intended Learning Outcomes (ILOs)

Subject-specific knowledge, understanding and skills intended by the institution to be gained by the learners completing a particular educational activity. The ILOs emphasize what is expected that learners will be able to do as a result of a learning activity.

8. Knowledge and Understanding

Knowledge is the intended information to be gained from an educational activity including facts, terms, theories and basic concepts. Understanding involves comprehending and grasping the meaning or the underlying explanation of scientific objects.

9. Intellectual Skills

Learning and cognitive capabilities that involve critical thinking and creativity. These include application, analysis, synthesis and evaluation of information.

10. Professional and Practical Skills

Application of specialized knowledge, training and proficiency in a subject or field to attain successful career development and personal advancement.

11. General and Transferable Skills

Skills that are not subject-specific and commonly needed in education, employment, life-long learning and self development. These skills include communication, team work, numeracy, independent learning, interpersonal relationship, and problem solving... etc.

IV. References

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