

Republic of Yemen

Ministry of Higher Education & Scientific Research



Council for Accreditation & Quality Assurance

National Academic Reference Standards (NARS)

Dentistry Undergraduate Programs

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PREFACE

The Council for Accreditation and Quality Assurance in Higher Education (CAQAY) is pleased to introduce this document that contains the National Academic Reference Standards for dentistry. In the light of its mission and general policy for developing National Academic Reference Standards (NARS) for higher education, the Council intends to present this document with a view to provide higher education institutions with reference points in the design, delivery and review of their academic programs. It also aims at providing these institutions with a general guidance for articulating the graduate attributes and intended learning outcomes associated with the programs. By these National Academic Reference Standards stated in this document, the Council hopes to solve the problems that higher education institutions face during the process of programs' review or development by bridging the gap that usually arises as a result of the general absence of national academic reference standards. Hence, there is a genuine need for National Academic Reference Standards for dentistry programs.

The graduate attributes presented in this document and the learning outcomes derived from them as well as teaching and assessment methods provide faculties of dentistry deans, department chairs and faculty members with a frame of reference for reviewing their curriculum. The Council is confident that if the design, content, and implementation of faculties of dentistry curricula are guided by the set of graduate attributes and learning outcomes presented in this document, the dentistry education students will be well prepared to assume their expected professional duties as high-quality specialized graduates.

The Council recognizes that faculties of dentistry have to respond to unprecedented changes in the methods of dentistry education. We hope that faculties of dentistry will respond to the intent of this document with some sense of urgency. Faculties of dentistry should consider establishing formal processes for using those attributes and learning outcomes to guide reviews of their curricula and program specifications. This should also be accompanied by gradual but significant changes in the way faculties of dentistry teach and assess their students. This aspect of dentistry education needs a close focus from the deans and department chairs in order to make sound improvements in dentistry education in our country.

Prof. Abdullateef Haidar,

CAQAY Chairperson

Sana'a, 6 May 2018

INTRODUCTION ABOUT NARS (NARS)

National Academic Reference Standards (NARS) are the expected minimum requirements of knowledge, competencies, and skills necessary to fulfill the requirements of an academic degree.

NARS aim at providing a minimum level of reference that guides the academic community to prepare academic program specifications in a particular field or specialization. It also represents the overall expectation of academic qualifications, abilities and qualities that graduates should acquire when completing a study program.

NARS represent a threshold of standards that encourage higher levels of achievement and therefore entail educational institutions to distinguish themselves in their educational performance by developing their own Academic Reference Standards (ARS). On the Other hand, ARS for educational institutions represent higher level of requirements that educational institutions must achieve through their academic programs to ensure that their graduates are able to carry out professional or career practices successfully.

It must be pointed out here that NARS do not intend to provide a unified national curriculum for academic programs, nor do they seek to provide a list of contents for academic programs. Hence, the authors of NARS documents avoided such tasks, as they are core task of higher education institutions. Higher education institutions should refer to NARS documents to prepare their program specification documents that typically include programs goals, graduate attributes, learning outcomes, study plans, contents, strategies for teaching and learning, assessment methods, etc.

The subject benchmark statements in Dentistry that are developed here by a number of dentistry faculty members from many Yemeni universities describe the characteristics of a program of study required for training a dental graduate possessing the minimum acceptable attributes and capabilities to be able to work effectively in their professional domains.

HISTORY OF DENTAL EDUCATION IN YEMEN

Dental education in Yemen is lagging behind the rest of many Arab countries. However, there is a strong desire to meet the needs of the local market to achieve self-sufficiency and to respond to the development process in the Country. This resulted in establishing undergraduate dental education in many public and private universities. The first Dental faculty was established in a private university “the University of Science and Technology” in 1994. In public universities, the first faculty was established in Tamar University in 1996/1997. Sana’a University and Aden University established their dental programs in 1997 within the faculties of medicine and health sciences. Gradually, dentistry has been developed by transforming those programs into faculties of dentistry. At the beginning of the academic year 2001/2002, Sana’a University Council issued a decree to establish its Faculty of Dentistry having the dentistry program independent from the Faculty of Medicine and Health Sciences. In the same way, Aden University issued a decree in 2009 to develop their dental program into an independent faculty in 2009. Since then, many Faculties of Dentistry have been established all around the Country both in public and private universities. This includes: Ibb University (2000/2001), Hodeidah University (2005/2006), Queen Arwa University (2003/2004) within the Faculty of Health Sciences, Saba University (2014). The other universities that are now offering dental education include, Al Hadara University, Dar Al Salam University, Saba University, etc.

NATIONAL ACADEMIC REFERENCE STANDARDS FOR DENTISTRY PROGRAM

I. Graduate Attributes

Upon successful completion of an undergraduate dentistry program, the graduates will be able to:

1. Independently deliver oral health care services within the scope of general dentistry including patients with special needs.
2. Apply infection control measures and radiation protection.
3. Communicate effectively with patients, colleagues and other members of medical and/or oral dental team.
4. Apply critical thinking and evidence-based problem solving when providing patients' care.
5. Respond to community's cultured and social characteristics and understand their implications on oral disease management and prevention.
6. Work in a team with dental staff (receptionists, dental assistants, dental hygienists, dental laboratory technicians and treatment coordinators) to deal with dental cases.
7. Conduct dental practice with high regard to ethics and abide to medico-legal standards.
8. Demonstrate leadership qualities and capacity to function effectively within a team.
9. Identify their own professional limits and conduct clinical referrals when appropriate.
10. Strive for continuous education, self-development, lifelong learning and research to remain updated with advancements in dental practices and dental technology.

II. Intended Learning Outcomes

A-Knowledge and Understanding

Upon successful completion of an undergraduate dentistry program, the graduates will be able to:

- A1. Describe the scientific basis of dentistry and the relevant biomedical and behavioral sciences which form the basis for understanding human growth, development and health.
- A2. Explain the structure and function of the human body in health and disease related to the practice of dentistry.
- A3. Identify the rules and ethics governing dental practices.
- A4. Describe the different clinical, laboratory and special investigatory procedures practiced in dentistry.
- A5. Show an understanding of the psychological, cultural and social factors that have implications on oral disease management and prevention.
- A6. Explain the principles of evidence-based dentistry and its relation to scientific research

B-Intellectual/Cognitive Skills:

Upon successful completion of an undergraduate dentistry program, the graduates will be able to:

- B1. Incorporate theoretical basic biomedical, behavioral and dental sciences with the clinical signs and symptoms for appropriate understanding of disease and its management.
- B2. Apply critical thinking and evidence-based problem solving when providing patient's care.
- B3. Prioritize patient's treatment needs and formulate an appropriate treatment plan.
- B4. Construct preventive strategies at different levels according to the targeted individual and community needs.
- B5. Select suitable dental materials, and prescribe medicaments to be used in a specific clinical situation.

C- Professional and practical skills:

Upon successful completion of an undergraduate dentistry program, the graduates will be able to:

- C1. Obtain and record a comprehensive history, perform an appropriate physical examination, and carry out different investigations to reach a correct diagnosis and treatment.
- C2. Detect pathological conditions related to the dental practice.
- C3. Apply infection control and radiation protection according to international standards.
- C4. Apply preventive measures for different age groups bearing in mind the different needs of young children, adolescents, adults, special needs and the ageing population/elderly.
- C5. Plan when, how and where to refer a patient to a specialist based on clinical assessment.
- C6. Assess the risk of medical emergencies and be competent in their management within the dental practice setup.
- C7. Apply comprehensive clinical practices.

D – General /Transferable Skills :

Upon successful completion of an undergraduate dentistry program, the graduates will be able to:

- D1. Commit to continuous education, self-development and lifelong learning to remain updated with advances in dental practice.
- D2. Use advanced information and communication technologies to enrich and diversify professional experience.
- D3. Demonstrate leadership and teamwork skills with colleagues and other oral health team for effective delivery of oral health care.
- D4. Manage time, set treatment priorities and work to prescribed time limits.
- D5. Maintain full and accurate clinical records (manual and electronic).
- D6. Display appropriate attitudes both on personal and professional levels to keep an excellent regard of the profession in the society.
- D7. Identify patients' expectations, desires and attitudes when considering treatment planning.
- D8. Analyze and resolve problems and deal with uncertainty.

TEACHING AND LEARNING STRATEGIES AND ASSESSMENT TOOLS

NARS approach emphasizes the importance of aligning teaching, learning and assessment with NARS to help students acquire graduate attributes and the intended learning outcomes.

Although teaching and learning strategies and assessment methods vary from one discipline to another and from an academic program to another, whatever teaching and learning strategies and assessment tools are used, they should provide students with opportunities to acquire graduate attributes and the intended learning outcomes. This requires that curricula design and delivery methods should be updated periodically to respond to developments in the subject matter, the results of research about teaching and learning in higher education, changes in national policy, professional practices and the needs of labor market.

A. Teaching and Learning Strategies

The introduction of NARS in higher education curriculum development is a new approach that requires higher education institutions to apply appropriate teaching and learning opportunities to help students achieve academic standards and to demonstrate that all their graduates are able to achieve those standards.

Regardless of the teaching approach adopted by a faculty, institutions of higher education should provide a great deal of active learning in which the students are actively involved in the learning process. Besides, sufficient time for directed self-learning and reflections should be allocated to encourage students to develop life-long learning habits.

Curriculum should also be designed to provide students with sufficient opportunities to acquire independent skills and to develop practical and professional skills to a level that qualifies them to obtain professional licensing. This requires sufficient practical applications and field training during long periods of their academic study.

In general, teaching and learning in dentistry undergraduate programs should use a variety of teaching methods, such as:

- Active Lectures (supported with dissections),
- Group learning and problem-based learning,
- Seminars, journal clubs and workshops,
- Dental clinical settings,
- Ward and surgical operation theatre,
- Observation and treatment of patients,
- Computer and web-based learning,
- The use of communication and information technology,
- Directed self-study.

B. Assessment Tools

Assessment is the means by which students' ability to meet academic standards is measured and should also be a key part of the learning process. This requires - in addition to course assessments - faculties of dentistry to design assessments at the program level to ensure that students met the academic standards, and the assessment tools must be credible and consistent.

On the other hand, NARS require an emphasis on rigorous assessment of practical and professional skills to identify those who are not yet qualified for the profession or occupation. The ways to achieve this may vary, but should always include direct and frequent observations of students during practical applications and field training.

It should also be noted that while it may be difficult to assess professional attitudes directly, the impact of attitudes on student behavior should be assessed by observing this behavior over a period of time.

Finally, assessments must be accurate but should not be exhausting or repetitive, as this may affect the learning process.

In general, assessment in dentistry undergraduate programs should use a variety of teaching methods, such as:

- Short essays,
- Written assessments, such as multiple choice questions (MCQs),
- Faculty assessment by structured observation through checklists and rating scales,
- Multi-source assessments, such as, student self-assessment and peer assessment,
- Simulations, such as, computer-based clinical scenarios,
- Multi-competency comprehensive assessments, such as, objective structured clinical exams (OSCE),
- Work samples, such as, portfolios.

TERMINOLOGY

1. Higher education institutions:

These are universities, faculties, higher institutes and academies which offer academic programs that extend for a period of more than three years of study under the supervision of the Ministry of Higher Education and Scientific Research.

2. NARS:

The national academic reference standards prepared by the Council for Accreditation and Quality Assurance with the assistance of specialized experts and representatives of various beneficiary sectors to represent the minimum standards required for accreditation of academic programs.

3. ARS:

Academic standards prepared by higher education institutions, provided that they include NARS as well as a number of standards (attributes and learning outcomes) that distinguish an institution from other institutions (allowing for creativity and diversity).

4. Academic program:

A distinct and well-structured group of courses that, after successfully completed, enable students to get an academic degree associated with an academic program (BA / BSc, MSc, PhD).

5. Graduate attributes:

A set of attributes (competencies) that result from the acquisition of knowledge and skills during the study of a particular academic program, and which identify what the graduate is expected to exhibit at the end of an academic program.

6. ILOs:

Intended Learning Outcomes (ILOs) refer to the knowledge, understanding and skills that specify what a student should know, be able to do and the values to be acquired after the completion of a study unit, a course or an academic program.

7. Knowledge and understanding:

Key facts, concepts, laws, theories and techniques that the students are reasonably expected to acquire in a particular field of specialization. It also includes mental skills such as memorizing and comprehension.

8. Intellectual skills:

These are skills that the academic program seeks to help students develop, such as analysis, the ability to choose from different alternatives, discussion and reasoning skills, innovation, creative thinking and problem solving.

9. Practical and professional skills:

These are skills that enable a student to convert acquired academic knowledge into practical applications such as: ability to diagnose diseases, write medical prescription, manage water resources, or accomplish an engineering design.

10. Transferable skills:

These are general skills that involve several disciplines, such as communication skills, computer skills, IT skills, management skills, discussion and negotiation skills, self-marketing skills, time management skills, teamwork skills, presentation and delivery skills, and research skills.

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