

King Saud University, College of Dentistry
Department of Preventive Dental Sciences
DIVISION OF COMMUNITY DENTISTRY

421 PDS

Principles of Dental Public Health - First Semester
Community Dentistry - Second Semester

Course Directors: **Dr. H. Al-Halawany [DUC]** **Dr. S. Al-Sadhan [MUC]**
Contributor: **Dr. N. Nahas**

COURSE DESCRIPTION:

The first part of this course is designed to provide 5th Year dental student an awareness to the principles and activities of Dental Public Health, in addition to knowledge on the application of sciences of epidemiology and biostatistics in dental public health. The second part of the course will explore the concepts of the dental public health in the light of the oral health problems in the Kingdom of Saudi Arabia.

CREDIT HOUR : Three Credit Hour

COURSE ASSESSMENT:

The final grade of the course will be based on the following:

Quizzes	-	5%
First examination	-	10%
Second examination	-	15%
Critique project	-	15%
Third examination	-	10%
Final examination	-	15%
Community project	-	30%

To obtain a passing grade the student need to have a final cumulative score of **60%**.

ATTENDANCE:

Please be reminded absentees will be recorded for all students whom their names appears on the class list. If any student is absent for more than 25% of the total lectures, he/she will not be permitted to sit for the final examination. Students who came 10 minutes late for the lecture their attendance will not be taken for that lecture.

421 PDS- I
PRINCIPLES OF DENTAL PUBLIC HEALTH
First Semester

Course Directors: Dr. H. Al-Halawany [DUC] Dr. S. Al-Sadhan [MUC]

1.0 Course Objectives:

- a. To develop into the students an awareness and sensitivity to the public health problems and the activities in public health.
- b. To familiarize the students with the basic concepts, principles and methods of epidemiology and biostatistics.
- c. To provide the students with knowledge on the application of the sciences of epidemiology and biostatistics in dental public health.
- d. To provide the students with knowledge of the scientific method and the research process.
- e. To develop into the students an ability to read critically the dental literature and to distinguish quality of journals and researches.

2.0 Assessment:

First examination	-	10%
Critique project	-	15%
Second examination	-	15%

Several quizzes (2-3) will be given randomly through the course without previous notification during the first 5 minutes of any lecture session, so be prepared!.

3.0 Required Reading:

Dentistry, Dental Practice and the Community, 5th Edition
By: Burt and Eklund, Saunders, 1999

Recommended Reading:

- a. Principles of Dental Public Health
By: J.M. Dunning
- b. Dental Public Health
By: Geoffrey Slack
- c. Statistical Methods for Health Care Research
By: Barbara H. Munro & Ellis B.

NOTE : students are strongly advised to purchase the required textbook for the course which will be used in the first and second semester.

4.0 Credit Hour Equivalent: One (1) Hour

Course Project:

- The class is divided into groups of 4-6 students each (according to class size).
- Each group is assigned a published article for critical evaluation given two weeks before their oral presentations.
- The critical evaluation should cover all essential steps presented in the class.
- All team members should participate in presenting the critique orally.
- All students and division's faculty members will participate in discussing the presented articles.
- One week after the oral presentations, each group is required to submit a written report of the assigned critique incorporating comments made during the oral presentations.

PLEASE NOTE: The report must be typed. Spelling and grammar must be checked for accuracy before submission of the reports.

COURSE OUTLINE: 421 PDS – Academic Year 2006 - 2007

Session No.	Date	Loc	Topic	Lecturer	
1		DUC MUC	Public Health: Introduction to Course		
2		DUC MUC	Concepts and Principles of Public Health		Dunning, Chap. 1 & 2
3		DUC MUC	Epidemiology, Concepts and Principles		
4		DUC MUC	The Measurement of Oral Disease		Burt, Chap. 13
5		DUC MUC	Measuring Dental Caries		Burt, Chap. 14
6		DUC MUC	Measuring Periodontal Diseases and other conditions		Burt, Chap. 15 & 17
7		DUC MUC	Epidemiology of Dental Caries		Burt, Chap. 19
			FIRST ASSESSMENT TO BE ARRANGED		
8		DUC MUC	Epidemiology of Periodontal Diseases		Burt, Chap. 20
9		DUC MUC	Biostatistics I		Munro & Page, Chap. 1 & 2
10		DUC MUC	Biostatistics II		Munro & Page, Chap. 1 & 2
11		DUC MUC	Evaluation of Scientific Information I		Burt, Chap. 11 & Handout
12		DUC MUC	Evaluation of Scientific Information II		Burt, Chap. 11 & Handout
13		DUC MUC	Reading the Dental Literature		Burt, Chap. 11
14		DUC MUC	Discussion of Project		Handout
15		DUC MUC	Oral Presentation of Project to be arranged		
16			FINAL EXAMINATION TO BE ARRANGED		

SESSION OUTLINE

421 PDS - I

- Session 1** : Introduction to Dental Public Health
Lesson Content :
1. Definitions
 2. Historical background
 3. Areas of responsibility in Public Health Dentistry
 4. Preventive Medicine in Relation to Public Health
 5. Public Health Practices compared to Private Practice.
- Session 2** : Public Health: Concepts & Principles
Lesson Content :
1. Some characteristics of the public health method
 2. Basic public health activities
 3. Some characteristics public health techniques:
 - a. The Health Center
 - b. Case Finding
 - c. Community Health Councils
- Session 3** : Epidemiology: Concepts and Principles
Lesson Content :
1. Definition of Epidemiology
 2. Patterns of Disease
 3. Person, place and time model
 4. Host agent and environment model
 5. Epidemics
 6. Modes of disease transmission
 7. Types of epidemiologic investigation
- Session 4** : Dental Epidemiology: Measurements of Oral Disease
Lesson Content :
1. Concepts of measurement of oral disease
 2. Crude measures of oral disease (simple counts, rates and percentages)
 3. Methods of measuring oral diseases
 4. Characteristics of an ideal index
 - a. for permanent dentition
 - b. for primary dentition
 5. Examiner reliability
 6. Assessment of disease risk
- Session 5** : Measuring Dental Caries
Lesson Content :
1. The DMF index
 2. Criteria for diagnosing coronal caries
 3. Root caries
 4. Caries treatment needs

Session 6 : Measuring of Periodontal Diseases and other oral conditions
Lesson Content :

1. Measuring periodontal diseases
 - a. Gingivitis
 - b. Periodontitis
 - c. Periodontal treatment needs
 - d. Plaque and calculus
 - e. Partial-mouth periodontal measurements
2. Measuring malocclusion
4. Measuring of oral cancer
5. Measuring of dental fluorosis
6. Measuring cleft lip and palate

Session 7 : Epidemiology of Dental Caries
Lesson Content :

1. Global distribution
2. Susceptibility of different teeth
3. Regional and secular variations in caries experience
4. Distribution in caries severity
5. Caries distribution: demographic risk factors: age, gender, race and ethnicity, SES, familial and genetic patterns.
6. Caries distribution: risk factors and indicators – bacterial infection, nutrition, diet.
7. Early childhood caries
8. Root caries

Session 8 : **FIRST EXAMINATION**

Session 9 : Epidemiology of Dental Caries
Lesson Content :

1. Periodontal infections and host responses
2. Current models of periodontal diseases
3. Distribution of periodontal diseases
4. Gingivitis, periodontitis: prevalence and incidence
5. Demographic risk factors: gender, race, age, SES
6. Risk factors for periodontitis: oral hygiene, plaque, local factors, nutrition, tobacco use
7. Periodontitis and systemic conditions
8. Predicting periodontitis

Session 10 : Descriptive Statistical I
Lesson Content :

1. Introduction and data organization
 - variables types
 - frequency distribution
2. Measures of central tendency
 - mean
 - median
 - mode

		3.	Measures of dispersion
		-	variance
		-	standard deviation
		-	coefficient of variation
Session 11	:		Descriptive Statistical II
Lesson Content	:		
		1.	Graphic Presentation
		-	Graphic presentation for categorical data Bar, Pie, Pictogram
		-	Graphic presentation for quantitative data Histogram, frequency polygon, frequency curve
		2.	Distortion of the truth with figures and graphs
Session 12	:		Evaluation of Scientific Research I
Lesson Content	:		
		1.	Define research
		2.	What is scientific method
		3.	Research process
			Designing research plan/protocol
		a.	Implementation research protocol
		b.	Research report
		4.	Types of research
		5.	Types of epidemiological research
		a.	Non-experimental
		b.	Quasi-experimental
		c.	Experimental
		6.	Non-experimental research
		-	Descriptive
		-	Analytical
Session 13	:		Evaluation of Scientific Research II: Application of Basic Epidemiological Principles in Dental Public Health
Lesson Content	:		
		1.	Experimental Research
		-	Clinical trial
		-	Field trial
		-	Community trial
		2.	Principles of conducting experimental trial
		-	Select participants
		-	Sample size
		-	Control sedation
		-	Allocate subjects to comparison groups
		-	Administer treatment and measure outcome

3. Conduct of trial
4. Duration of clinical trial
5. Statistical analysis
 - What is inference?
 - What is hypothesis testing?

Session 14
Lesson Content

- : Reading Scientific Literature
- :
1. Importance of scientific information
 - a. Purpose of scientific information
 - b. Types of scientific information
 - c. Abstract, introduction, review of literature, material and methods
 - d. Sample selection, size, characteristics
 - e. Analysis of data
 - f. Results, discussion, conclusion, references
 - g. Ethical consideration
 2. A systematic approach for critical analysis of dental literature
 3. Items of a critique:
 - a. Location of published material
 - b. Author
 - c. Purpose of publication
 - d. Statement of the problem
 - e. Hypothesis and assumptions
 - f. Limitations and delimitations
 - g. Definition of terms
 - h. Review of the literature
 - i. Sample selection and research design
 - j. Materials and methods
 - k. Data collection and analysis
 - l. Discussion, summary, conclusions and references
 - m. Overall considerations
 4. Distribution of published articles and guidelines for critique to students groups.

Session 15
Lesson Contents

- : Presentation of Student Project (Critique)
- :
- With the current class sizes, oral presentations usually take more than one session.

421 PDS - II
COURSE TITLE: COMMUNITY DENTISTRY
Second Semester

Course Directors: **Dr. H. Al-Halawany [DUC] Dr. S. Al-Sadhan [MUC]**
Course Contributor: **Dr. N. Nahas**

1.0 COURSE DESCRIPTION:

The objective of this course is to explore the concepts of the dental public health in the light of the oral health problems found in the Kingdom of Saudi Arabia. Priority will be placed on practical approaches to program planning, organization and financing of Saudi dental care, practice management and professional ethics. The “clinical” component of the course will focus on the student developing and implementing a community-based oral health project.

CREDIT HOUR : Two Credit Hours

2.0 TERMINAL BEHAVIORAL OBJECTIVES:

Upon completing the course, the student should be able to:

1. Give examples of dental public health programs on the local, national and international level.
2. Describe a model for health project planning.
3. Know the existing delivery system in the Kingdom of Saudi Arabia.

Examples:

- a. Government Service
 - b. General Practice
 - c. Dental Services in Hospitals
 - d. School dental services and those for the handicapped
 - e. The College of Dentistry Clinics
4. Define the concept of dental treatment needs, demands and utilization.
 5. Describe the various types of dental personnel in the Kingdom of Saudi Arabia.
 6. Plan, implement, evaluate and report on a simple group community health project aimed at prevention and/or promotion of oral health.
 7. Define practice management. Outline planning procedures for a dental practice.

8. Outline the characteristics of a professional and the expectations from society.
9. Define infection control and discuss its importance in dentistry.
10. Define ethics and discuss responsibilities of health personnel in dental care.

3.0 LECTURE COURSE ORGANIZATION:

The course is a lecture style and there is a theoretical link with the community project. The major emphasis will be on activities which put the principles of Community Dentistry into practice.

4.0 ASSESSMENT FOR COURSE:

The grade in this course will be based on the quizzes, exams and the results of a community project. Several quizzes (2-3) will be given randomly through the course without previous notification during the first 5 minutes of any lecture session, so be prepared!

5.0 ASSESSMENT FOR LECTURE PORTION:

Midterm examination	-	10%
Final examination	-	15%

6.0 CREDIT : Two (2) Credit Hours

7.0 READINGS:

Required Readings : Dentistry, Dental Practice and the Community
By: Burt and Eklund
5th Edition, W.B. Saunders Co.

Recommended Readings:

Principles of Dental Public Health
By: James Dunning
Harvard University Press

8.0 COURSE CONTRIBUTORS:

Dr. N. Nahas

9.0 ASSESSMENT FOR PROJECT PORTION:

The grade in this portion will be based on the results of a community project. At the end of the course, this grade will be combined with the lecture grade for the final grade.

Individual participation	-	10%
Group evaluation	-	10%
Written final report	-	10%
Community Project Total	-	30%

LECTURES SCHEDULE – 421 PDS – Academic Year 2006-2007G

Session No.	Date	Loc	Topic	Lecturer	
1		MUC DUC	Introduction to the course.		
2		MUC DUC	Planning and organization of dental health programs.		Articles- (Dunning-Pickett)
3		MUC DUC	Evaluation of the quality of dental care		Articles- (Dunning-Pickett)
4		MUC DUC	Community-based preventive program.		Articles
5		MUC DUC	Health education, promotion concepts and principles I.		Burt, Chap. 5
6		MUC DUC	Health education, promotion concepts and principles II.		Articles
7		MUC DUC	International oral health care.		Articles
		MUC DUC	THIRD ASSESSMENT		
8		MUC DUC	Economics and financing of dental care.		Articles
9		MUC DUC	Dental practice organization		Burt, Chap. 7 Articles
10		MUC DUC	Dental practice management I		
11		MUC DUC	Dental practice Management II		
12		MUC DUC	Utilization of dental auxiliaries.		Burt, Chap. 9
13		MUC DUC	Infection control.		Burt, Chap. 6
14		MUC DUC	Dental ethics and responsibility in dental care.		Burt, Chap. 3
		MUC DUC	Oral presentation of the community project.		

SESSION OUTLINE

421 PDS – II

- Session 1** : Introduction
Lesson Contents :
1. Aims of the course and topics of interest.
 2. Define concept of dental treatment needs, demands and utilization.
 3. Utilization of dental services.
 4. Factors associated with the use of dental services.
- Session 2** : Planning and Organization of Dental Health Programs
Lesson Contents :
1. Definition of planning
 2. Types of planning
 3. Basic concept of planning
 4. Conducting a need assessment
 5. Steps in planning dental health programs
 6. Planning dental care for the community vs. planning dental care.
- Session 3** : Evaluation of Quality of Dental Care
Lesson Contents :
1. Define evaluation and types of evaluation
 2. Purpose of evaluation
 3. Basic requirements of evaluation
 4. Measurement
 5. What is measured?
 6. Aspects of evaluation.
- Session 4** : Community-Based Preventive Program (CBPP)
Lesson Contents :
1. What is community-based preventive measures?
 2. Determinants of CBPP
 - Population growth
 - Disease patterns
 - Resources
 - Economic and educational level
 3. Primary health care
 4. Types of community-based prevention program
 5. Cost-effectiveness of preventive methods
 6. The role of the private dental practitioner in disease prevention
- Session 5 & 6** : Health Education and Promotion
Lesson Contents :
1. Definition of health education and health promotion
 2. The objectives of oral health education and promotion
 3. Community-based health promotion
 4. Knowledge and attributes about oral health
 5. Steps in designing a dental health education program
 6. Health education materials applicable to dentistry

- Session 7** : International Oral Health Care
Lesson Contents :
1. Factors that cause the development of a dental care system
 - Biological factors
 - Attitudes of patients
 - Behavior and cultural patterns
 - Management functions
 - Conceptual
 - Operational
 - Methodological
 2. Private vs. Public Health Practice
 3. Manpower
 4. What can we learn from other?
 - developed world
 - developing world

Session 8 : **THIRD ASSESSMENT**

- Session 9** : Economics and Financing of Dental Care
Lesson Contents :
1. Economic systems and health philosophy
 2. The costs of health care
 3. Mechanisms of payment for dental care
 - a. Private fee for service
 - b. Post payment plans
 - c. Private-third party pre-payment plans
 - d. Salaried dentists
 - e. Public financing of dental care
 4. Free enterprise health care
 5. The development of public care programs

- Session 10 & 11** : Oral Health survey
Lesson Contents :
- Objectives of oral health survey
 - Methodology
 - Result presentation of oral health survey, phase I and phase II

- Session 12** : The Structure of Dental Practice
Lesson Contents :
1. Delivery system: Principal component
 2. Types of practice organization
 - Private practice
 - Open-closed panels
 - Hospital dentistry
 - Public Programs
 3. Quality assurance
 4. Planning and management of private practice

Session 13 : Utilization of Dental Auxiliaries
Lesson Contents :
1. The dental team
2. Rationale for teamwork in dental auxiliary utilization
3. The dental assistant
4. The dental laboratory technician
5. The dental hygienist
6. New Zealand dental nurse
7. Expanded function dental auxiliary
8. New auxiliary types for developing countries

Session 14 : Infection Control
Lesson Contents :
- Public health responsibilities and rationale for intervention
- Principles tools for infection control
- Legal aspects of infection control – The Government Presence
- Specific infection concerning dental profession
- Infection control – guidelines to dental office personnel
- OSHA and dental practice
- Organizing an infection control program

Session 15 : Ethnics and Responsibilities in Dental Care
Lesson Contents :
- A framework for ethical standards
- Individual and social responsibility
- The right to health care
- Ethics in patient care
- Professional ethics and self-regulation
- Ethical standards in research

Session 16 : Oral Presentation of the Community Project.

COMMUNITY HEALTH FIELD PROJECT

In coordination with the development of a precision approach to clinical prevention and patient education, it is proposed that you develop a prototype dental health education program. This program should be aimed and developed with specific audience in mind. Since, many public health activities require team work and coordination this project can provide for an experience in group health task accomplishment. Moreover, when developed, the program can be eminently applicable to the patient education needs of the academic clinical care program and to external programs such as the primary and secondary school system.

PREVENTIVE ORAL HEALTH PROGRAM

You will organize, plan and implement an appropriate dental health education program for specific groups in Saudi Arabia which includes the following topics:

- a. General Dental Health
 - b. Diet and Nutrition
 - c. Dental Diseases
 - d. Plaque Control Measures
 - e. Fluoride Therapy
 - f. Others (must be approved)
- You will demonstrate the ability to collaborate with other dental students in the development of an ideal dental health education program.
 - You will be able to discuss, analyze and constructively criticize dental health education programs developed by fellow students.
 - You will help to develop a program incorporating the finalized critique versions of your developed dental health education modules.
 - You will increase your perspective on the current programs for dental care and patient education in Saudi Arabia by taking field trips to special groups and presenting your dental health education program.

The groups can include:

- a. Primary School Children
- b. Intermediate School Children
- c. Secondary School Children
- d. Mothers and Women's Group
- e. Elderly Groups
- f. Handicapped Groups
- g. Others

- A journal must be maintained individually which is a detailed, comprehensive record of activities and progress of the project. This journal must be available to faculty members each week for inspection. At the midterm and end of the semester the journal will be graded for your individual grade. Students who copy from each other in their journal will be penalized.

SET

There is a serious need for dental health education programs on oral health prevention in Saudi Arabia. Because of your role as dental graduates in the Kingdom it is your responsibility to develop and to implement dental education programs. This exercise is focused on providing you a valuable experience in group problem solving and team effort.

RESOURCES AND STRATEGIES

You have learned in detail the principles of prevention and patient education in dentistry. Your team is to use this valuable experience plus the resources of the library, and faculty to develop this program. You are expected to delegate task to members of your team and to work on this project during time, inside and outside class meetings hours.

SCHEDULE AND TIMETABLE: COMMUNITY FIELD PROJECT

FIRST SEMESTER:

- | | |
|--------------------------|---|
| Sessions 2 and 3. | Group orientations and discussion of field project and goals.

Establishment of working groups and selection of group leader.

Selection of topic and target group for the project. |
| Sessions 4 - 6. | Develop outline of each topic and its contents.
Develop pre-test and post-test based on contents.

Establish contact and gain information on target group and sponsors if available. |
| Session 7. | Present to group members results of research. |
| Sessions 8- 10. | Development of educational materials used in the project. |
| Session 11- 13. | Finalizing contents of topics. |
| Sessions 14- 15. | Oral presentation of journal critique project |

SECOND SEMESTER:

- Sessions 1-2.** Present to entire class contents for criticism.
Finalize plans and dates for visiting target groups.
- Session 3.** Have revision ready for program implementation.
- Sessions 4-6.** Field visits to present programs to the target groups.
Data collection.
- Sessions 7-10.** Statistical analysis and report writing.
- Session 11.** Submission of the report and community project items required.
- Sessions 12- 14.** Oral presentation of the community project (date will be organized)

NOTE: Program planning must be completed by the third week of the second semester. The following three weeks should be spent in program implementation. You will be graded on the strength of project and the number of visits to target groups. This schedule must be strictly adhered to.

School projects should be implemented during fourth, fifth and sixth week. A lecture on methods of data analysis will be given on the seventh week.

Journals must be maintained by all members of each project team. These journals will be checked periodically by Course Instructors to gauge the progress. They will be checked and graded at the Midterm and the end of the course.

VERY IMPORTANT NOTICES

ALL FINAL REPORTS AND JOURNALS MUST BE TURNED IN BY THE ELEVENTH WEEK OF THE SEMESTER. ANY MATERIALS TURNED IN LATER WILL AFFECT THE GRADE GREATLY.

SOME OF THE PROJECT EDUCATIONAL MATERIALS DEVELOPED MUST BE PROVIDED TO THE DIVISION OF COMMUNITY DENTISTRY AND TO THE COLLEGE OF DENTISTRY FOR FURTHER DISTRIBUTION. SUFFICIENT QUANTITIES SHOULD BE PRINTED UP FOR THIS PURPOSE.

FEMALES SHOULD ORGANIZE INTO GROUPS WHICH CAN PROVIDE FOR YOUR OWN TRANSPORTATION TO THE SCHOOLS. THE COLLEGE DOES NOT HAVE ENOUGH VEHICLES TO PROVIDE TRANSPORTATION.

GETTING A SPONSOR IS NOT A SPECIFIC REQUIREMENT FOR THIS COURSE DO NOT PUT UNDUE EMPHASIS ON GETTING A SPONSOR. GETTING A GOOD SPONSOR WILL NOT AFFECT YOUR GRADE. THE PROCESS OF GETTING SPONSOR IS AN EXERCISE IN NEGOTIATION AND LEARNING HOW TO GET COMMUNITY SUPPORT. IF YOUR GROUP FINDS A COMPANY TO SUPPORT YOUR PROJECT THE NAME OF THE COMPANY SHOULD BE WRITEN IN SMALL SIZE PRINT ON ANY MATERIALS YOU PRINT. (e.g. COMPLIMENTS OF).

ITEMS TO BE PASSED IN AT THE ELEVENTH WEEK.

1. GROUP FINAL REPORT (One / Group)
2. PROGRAM PLANNING (One / Group)
3. INDIVIDUAL JOURNAL (Diary)
4. ONE COPY OF EDUCATION LECTURE (FLOPPY DISK).
5. SIGNED AND STAMPED SCHOOL VISIT FORMS.
6. SAMPLES OF AUDIO-VISUAL MATERIAL PRODUCED (Phamphlets, posters, etc. sufficient quantities for further distribution).
7. LIST OF SPONSOR'S NAME WITH CONTACT NUMBER.
8. RECIEPTS OF PURCHASE RELATED TO EDUCATIONAL MATERIALS DEVELOPED.

Recommendation that each member of the class should keep a personal copy for all the items above for future reference and for ability to continue education programs in future.

LECTURE : ORAL HABITS

1. What are the symptoms of active digit habit?
2. List the sequence of treatment approach of digit habits.
3. Name the appliances that could be used to stop the digit habits of the child.
4. At what age the dentist should start treating child with digit habit and what is the most important factor that dentist should be aware of before starting the treatment?
5. List the causes of bruxism and the sequence of treatment.
6. Which of the following habits could create open bite and who could maintain it?
 - a. Digit habit
 - b. Lip sucking
 - c. Mouth breathing
 - d. Tongue thrust