UNIVERSITY MASTER'S PROGRAMME IN PUBLIC HEALTH

Department of Medicine and Life Sciences

Epidemiology II

2022 - 2023

GENERAL INFORMATION

Academic course: 2023-2024
Subject name: Epidemiology II
Kind of subject: Compulsory
Number of credits: 3 ECTS (75 hours of dedication)
Coordination: Olatz Garin
Language of teaching: Spanish

TEACHERS

Olatz Garin: MPH, PhD. Associated Researcher at the Health Services Research Group, Hospital del Mar Research Institute, and Associate Professor of the CEXS-UPF.
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TEACHING ASSISTANTS

Renata Briseño: MD, MPH (dissertation pending), Researcher at the Health Services Research Group, Hospital del Mar Research Institute.

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INTRODUCTION

The purpose of this course is to consolidate, explore in greater depth and complement the basics acquired in the course “Epidemiology I”. It is also to enable the student to correctly interpret studies published in the literature and interpret basic epidemiological analysis. The syllabus will explore a selection of designs (based on elementary designs).

AIMS

To be able to:

- study the frequency and distribution of diseases within human populations and environments
- determine if any factor is associated with the health effect
- compare groups of people who are alike except for the risk factor under evaluation

SKILLS

GENERAL

- **Instrumental skills:**
  - Basic understanding of the design of epidemiological studies.
  - Basic understanding of the analysis and interpretation of epidemiological research in public health.
  - Ability to solve problems and compare and contrast epidemiological hypotheses.
- **Personal skills:**
  - Ability to work a team.
  - Ability to collate results, write their description and interpretation and orally defend.
  - Communication skills.
- **Methodological skills:**
  - Promote the ability to design studies following straightforward procedures.
  - Promote the ability to analyse data from the epidemiological perspective as well as using statistical criteria.
  - Encourage critical reading of epidemiological literature.
  - Encourage self motivation in work.

SPECIFIC

- Design of cross-sectional studies; assuring external validity.
- Design of longitudinal studies. Design of case-control studies; choosing the control group.
- Ability to analyse case-control and longitudinal studies.
- Working in teams to solve practical exercises.

METHODOLOGY

The work schedule combines theory sessions and seminars. Seminars can be individual or in group of 5 or 6 students (up to 8 groups).

EVALUATION

Continuous evaluation will be performed along the seminars, corrections, group presentations and final exam.

What is to be evaluated?

The understanding of the problem, the application of adequate methods, the correct interpretation of results, the writing up of the work and the level of communicative ability demonstrated therein. Also, the active participation in group work discussion and class. These are the items that will be evaluated.

Each of the seminars will count 10% or 5% of the total grade (see calendar table), with a total of 60%. The group presentations on study's designs will count 25%, and the final exam 15%. However, it is necessary to pass the exam (5 or above).

CALENDAR

January		
10/01/24	15:00 – 17:00	**T. Session 1:** Introduction and Cross-sectional studies **Seminar 1:** Exercise Basic Epidemiology (individual 18/01) _*10%*
18/01/24	15:00 – 17:30	**T. Session 2:** Confounding definition, detection and control **Seminar 2:** Exercise on confounding (individual 31/01) _*10%*
	17:30 – 19:30	**T. Session 3:** Evaluation of interaction **Seminar 3:** Exercise on interaction (individual 31/01) _*5%*
25/01/24	15:00 – 17:00	**T. Session 4:** Clinical Trials **Seminar 4:** Clinical trials (individual 15/02) _10%
	17:30 – 19:30	**T. Session and Seminar:** Diagnostic Tests' accuracy
Se darán recursos alternativos a la clase teórica.		**T. Session 4:** Cohort studies
31/01/24	17:30 – 19:30	Revision of Seminars 2, 3 **T. Session and Seminar 5:** Standardization (individual 15/02) _*10%*
February		
01/02/24	15:00 – 17:00	**T. Session 6:** Case-control studies **Seminar 6:** Case-control (group 15/02) _*10%*
	17:30 – 19:30	**Seminar 7:** Study's designs to be presented by groups on 08/02
08/02/24	15:00 – 19:30	Group presentations on Study's designs_*30%* **(Seminar 7)**
13/03/24		**Final Test**_*15%*

RECOMMENDED READINGS BY SESSION

Cross-sectional studies	- Szklo & Nieto. Epidemiology: Beyond de Basics. Jones And Bartlett Publishers, 2006. Chapter 1: Basic study designs in analytical epidemiology - Rothman KJ, Greenland S. Modern epidemiology. 2nd edition. Boston: Little, Brown & Co., 1998. Chapter 5: Types of epidemiological studies.
Confounding: definition and control	- Szklo & Nieto. Chapter 5: Identifying non-causal associations: confounding - Szklo & Nieto. Chapter 7: Stratification and adjustment: multivariate analysis in epidemiology - Rothman KJ, Greenland S. Accuracy considerations in study design. In: Rothman KJ - Rothman KJ, Greenland S. Modern epidemiology. 2nd edition. Boston: Little, Brown & Co., 1998; pp. 135-145 - Datta M. You cannot exclude the explanation you have not considered. Lancet 1993; 342: 345-7 - Schlesselman JJ, Stolley PD. Casecontrol studies. Design, conduct, analysis. New York: Oxford University Press, 1982: 171-193
Cohort studies	- Rothman and Greenland: Chapter 6, pages 79-92. Other readings: - Clayton D, Hills M. Statistical methods in epidemiology. Oxford: Oxford Sciences Publications, 1993:227-233; 298-305
Evaluation of interaction	- Szklo & Nieto. Chapter 6: Defining and assessing heterogeneity of effects: interaction. - Schlesselman JJ, Stolley PD. Casecontrol studies. Design, conduct, analysis. New York: Oxford University Press, 1982: 171-193: 63-68 - Pearce N. Analytical implications of epidemiological concepts of interaction. Int J Epidemiol 1989; 18: 976-980

Case-control studies	- Szklo & Nieto. Chapter 1: pages 28-51 - Rothman and Greenland: Chapter 7, pages 93-114. Other readings: - Hosmer DW, Lemeshow S. Applied logistic regression. New York: John Wiley & sons, 1989; 1-36 - Slechelman JJ. Case-control studies. Design, conduct, analysis. Oxford University Press 1982; 124-134; 227-280
Discussion on clinical trials	- Rothman KJ, Greenland S. Modern epidemiology. 2nd edition. Boston: Little, Brown & Co., 1998. Chapter on Clinical Trials. - Akobeng AK. Assessing the Validity of Clinical Trials. Journal of Pediatric Gastroenterology and Nutrition. 2008 47:277–282.
Measures to assess test results	Readings