Differential Medicine by Sex and Gender

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Degree	Type	Year
2502442 Medicine	OT	3

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

A basic knowledge of medical and surgical pathology is required.

Objectives and Contextualisation

- To learn about sex and gender differences in the health-disease process, describing diseases by sex, considering sex-gender interactions and identifying gender inequalities in health.

- To provide students with knowledge of sex and gender differences in the medical specialities with the most scientific evidence.

- Incorporate a gender approach to identify stereotypes, norms and social roles, as well as to contribute to developing their critical spirit and identify the sexist stereotype widely incorporated in our way of thinking, feeling and acting as professionals.

- To consider gender and sex as determinants of health alongside other intersecting variables such as age, culture, ethnicity, beliefs, values and sexual orientation.

- To expose the influence of sex and gender on the maintenance and promotion of health and on the process of becoming ill.

- Recognise the social factors that lead to health inequalities and inequities based on sex.

- Identify how gender stereotypes have an impact on health and illness.

- Know and know how to identify all those health problems that have a differential expression according to sex.

- Promote patient-centred approach in clinical consultations. Acquire skills for shared decision-making.

- To critically address gender bias in science, in the way studies are designed, in working methods and in the analysis of results.

- Promote a gender focus in research and dissemination of knowledge.

- Incorporate inclusive language in all communication channels.

Competences

- Demonstrate understanding of the causal agents and the risk factors that determine states of health and the progression of illnesses.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate understanding of the structure and function of the human organism in illness, at different stages in life and in both sexes.
- Establish a diagnostic approach and a well thought-out strategy for action, taking account of the results of the anamnesis and the physical examination, and the results of the appropriate complementary tests carried out subsequently.
- Indicate the basic diagnosis techniques and procedures and analyse and interpret the results so as to better pinpoint the nature of the problems.
- Indicate the most suitable treatment for the most prevalent acute and chronic processes, and for the terminally ill.
- Obtain and prepare a patient record that contains all important information and is structured and patient-centred, taking into account all age and gender groups and cultural, social and ethnic factors.
- Recognise the basic elements of the medical profession as the result of an evolving, scientific, social and cultural process, including ethical principles, legal responsibilities and patient-oriented professional practice.
- Use information and communication technologies in professional practice.

Learning Outcomes

1. Assess modifications to clinical parameters in the different age groups.
2. Assess the efficiency of the main therapeutic interventions.

3. Assess the importance of every sign and symptom in the current illness.
4. Assess the relationship between efficacy and risk in the main therapeutic interventions.
5. Describe nutritional therapies, especially in the dietary treatment of diabetes mellitus, obesity, cardiovascular risk, renal and liver insufficiency and states of malnutrition.
6. Describe the general and local factors that affect the development of diseases.
7. Describe the illnesses related to nutritional imbalances.
8. Describe the main pathological situations of nutrition.
9. Describe the main pathological situations of the musculoskeletal system, the blood, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the genitourinary system, infectious pathologies and diseases of the elderly.
10. Describe the organ and system involvement and forms of presentation of diseases of the respiratory, circulatory and digestive systems, blood and hematopoietic organs, nervous system, musculoskeletal system, genitourinary system, metabolism and endocrine system.
11. Describe the person as a multidimensional being in which the interplay of biological, psychological, social, environmental and ethical factors determines and alters the states of health and disease and their manifestations.
12. Describe the relationship between constitution and disease as well as the food habits and drug use, and the physical, chemical, environmental, psychological, social and occupational and carcinogenic factors that determine the development of the disease.
13. Establish a therapeutic action plan considering the needs of patients and their family and social environment, and involving all members of the healthcare team.
14. Identify imbalances in body weight and nutritional states.
15. Identify serious clinical situations.
16. Identify the physical, chemical, environmental, psychological, social and occupational and carcinogenic factors, and the factors associated with food habits and drug use, that determine the development of the disease.
17. Identify the radiological and anatomopathological alterations of the commonest diseases in the different body systems, at different stages in life and in both sexes.
18. Identify tumour diseases, and the diagnosis and management of these.
19. Identify type, evolution and limitations in chronic diseases, their possible treatments and prevention of complications.
20. Indicate suitable therapeutic interventions for the main health problems.
21. Indicate the basic complementary examinations for interpreting the manifestations of the illness in the different organs and systems of the human body.
22. Understand the manifestations of the main pathologies on the structure and function of the human body.
23. Use information and communication technologies in professional practice.

Content

In practically all fields of scientific knowledge, from the humanities to engineering, the variables sex and gender are hardly considered. In many areas of our life, stereotypes and biases persist that construct the needs, interests and expectations of the white man as a universal norm and the rest of humanity is considered the exception.

Gender bias in medicine occurs when, given the same health need in men and women, a greater diagnostic or therapeutic effort is made in one sex compared to the other, this contributes to health inequalities between men and women.

Gender inequalities lead to excess mortality and morbidity throughout the world. The androcentric construction of science and specifically of medicine is responsible for these inequalities. A differentiated approach must be made between men and women because their bodies are biologically different, they react differently to the disease and the social structure affects them differently depending on whether they are men or women.

Social determinants play a very important role in our health. Male and female roles within society generate different life experiences and this influences health in both men and women. For example, the lower life expectancy of men has to do with the mandate of masculinity that forces them to take risks and relate to health

systems in a different way than women do. The lack of knowledge and scientific evidence on the health and disease of women causes less diagnostic and therapeutic effort. There are diseases in women that are never diagnosed or it is done too late and others that are overdiagnosed and overmedicated . If we add to this issue that gender disparities are not addressed in medical studies, the problem is perpetuated from generation to generation. To advance, the training of professionals in differential medicine and in a gender perspective is essential.

It is important that future doctors have the ability to identify the biological, social and psychological differences between men and women in different diseases; create gender-sensitive strategies and actions that understand the role of their own gender in the practice of medicine.

The Differential Medicine subject is aimed at providing students with knowledge about gender differences in each medical specialty and incorporating a gender approach to identify stereotypes, norms and social roles, as well as to help develop their critical spirit and acquire skills to identify the sexist stereotype widely incorporated into our way of thinking, feeling and acting as professionals.

The content includes some cross-sectional introductory topics applied to health and other specific ones for each clinical specialty in which there is already evidence of sex and gender differences.

a) Introductory topics:

- basic concepts of sex and gender (roles, power relations, prejudices, stereotypes, identity, equality, equity)

- sexual and gender differences and their influence on normal development, physiology and pathophysiology.

- communication between the doctor or the doctor or the patient taking into account gender inequalities, culture, age, ... and everything that intersects .

- physical examination taking into account age, sex and culture

- sexist violence

b) Specialties: In each subject it will be necessary to include the current scientific evidence in: a) diseases that are suffered by both sexes but with different symptoms, treatment, prognosis,...; b) diseases suffered by one sex more than another; c) diseases that only one sex suffers.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Seminars	6	0.24	22, 8, 5, 13, 19, 14, 16, 18, 15, 21, 20, 2, 4, 3, 1
Theory	9	0.36	22, 6, 10, 11, 12, 7, 9, 8, 5, 13, 19, 14, 16, 18, 17, 15, 21, 20, 2, 4, 3, 1
Type: Autonomous			
Elaboration of works	22	0.88	22, 6, 10, 11, 12, 7, 9, 8, 5, 13, 19, 14, 16, 18, 17, 15, 21, 20, 23, 2, 4, 3, 1
Information Search	10	0.4	6, 10, 11, 12, 7, 9, 8, 5, 23, 3
Literature review	7	0.28	8, 5, 13, 19, 20, 2, 4
Reading articles and documents of interest	20	0.8	22, 6, 10, 11, 7, 9, 8, 5, 23, 3, 1

Course methodology:

- Presentation of theoretical foundations. Interaction between students and teachers. Surveys at the end of class to encourage student participation.

- Seminars Active participation of students around a specific topic, debate between students and teachers. It may include the exhibition of joint works. Practical cases

- Reading articles recommended in the course guide and throughout the classes.

- Audiovisual and digital materials will be recommended to complement the topics discussed in class.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Active participation in class	10%	0	0	22, 6, 10, 11, 12, 7, 9, 8, 5, 13, 19, 14, 16, 18, 17, 15, 21, 20, 2, 4, 3, 1
Active participation in seminars	10%	0	0	6, 12, 5, 13, 19, 16, 15, 20, 23, 2, 4
Oral defense of the prepared work	30%	1	0.04	22, 6, 10, 11, 12, 7, 9, 8, 5, 13, 19, 14, 16, 18, 17, 15, 21, 20, 2, 4, 3, 1
Preparation of a communication / scientific poster	50%	0	0	22, 6, 10, 11, 12, 7, 9, 8, 5, 13, 19, 14, 16, 18, 17, 15, 21, 20, 23, 2, 4, 3, 1

This course does not have a single evaluation system.

The evaluation is continuous.

The evaluation of the course will be based on the following elements:

a) Participation in face-to-face classes (20% of the total grade). Participation will be assessed through a Kahoot-type survey at the end of each class.

b) Preparation of a scientific communication/poster on one of the topics covered throughout the course (50% of the total grade).

c) Oral defense of the prepared work (30% of the total grade). Students will need to prepare a poster communication and present it as an oral communication at the end of the course.

The final grade to pass the course must be equal to or higher than 5/10.

Recovery: Preparation of a scientific communication/poster on one of the topics covered throughout the course (50% of the total grade) and oral defense of the prepared work (50% of the total grade).

Bibliography

http://genderedinnovations.stanford.edu/

https://orwh.od.nih.gov/sex-gender/nih-policy-sex-biological-variable

Arnegard ME, Whitten LA, Hunter C, Clayton JA. Sex as a Biological Variable: A 5-Year Progress Report and Call to Action. J Womens Health (Larchmt). 2020 Jun;29(6):858-864. doi: 10.1089/jwh.2019.8247. Epub 2020 Jan 22. PMID: 31971851; PMCID: PMC7476377.

Artazcoz L, Chilet E, Escartín P, Fernández A. Incorporación de la perspectiva de género en la salud comunitaria. Informe SESPAS 2018 [Incorporation of the gender perspective in community health. SESPAS Report 2018]. Gac Sanit. 2018 Oct;32 Suppl 1:92-97. Spanish. doi: 10.1016/j.gaceta.2018.07.006. Epub 2018 Sep 11. PMID: 30217404.

Bartz D, Chitnis T, Kaiser UB, Rich-Edwards JW, Rexrode KM, Pennell PB, Goldstein JM, O'Neal MA, LeBoff M, Behn M, Seely EW, Joffe H, Manson JE. Clinical Advances in Sex- and Gender-Informed Medicine to Improve the Health of All: A Review. JAMA Intern Med. 2020 Apr 1;180(4):574-583. doi: 10.1001/jamainternmed.2019.7194. PMID: 32040165.

DiMarco M, Zhao H, Boulicault M, Richardson SS. Why "sex as a biological variable" conflicts with precision medicine initiatives. Cell Rep Med. 2022 Apr 19;3(4):100550. doi: 10.1016/j.xcrm.2022.100550. PMID: 35492240; PMCID: PMC9043982.

Docherty JR, Stanford SC, Panattieri RA, Alexander SPH, Cirino G, George CH, Hoyer D, Izzo AA, Ji Y, Lilley E, Sobey CG, Stanley P, Stefanska B, Stephens G, Teixeira M, Ahluwalia A. Sex: A change in our guidelines to authors to ensure that this is no longer an ignored experimental variable. Br J Pharmacol. 2019 Nov;176(21):4081-4086. doi: 10.1111/bph.14761. Epub 2019 Aug 23. Erratum in: Br J Pharmacol. 2021 Apr;178(7):1737. PMID: 31441038; PMCID: PMC6877799.

Franconi F, Campesi I, Colombo D, Antonini P. Sex-Gender Variable: Methodological Recommendations for Increasing Scientific Value of Clinical Studies. Cells. 2019 May 17;8(5):476. doi: 10.3390/cells8050476. PMID: 31109006; PMCID: PMC6562815.

James WH, Grech V. A review of the established and suspected causes of variations in human sex ratio at birth. Early Hum Dev. 2017 Jun;109:50-56. doi: 10.1016/j.earlhumdev.2017.03.002. Epub 2017 Mar 24. PMID: 28347592.

Mauvais-Jarvis F, Bairey Merz N, Barnes PJ, Brinton RD, Carrero JJ, DeMeo DL, De Vries GJ, Epperson CN, Govindan R, Klein SL, Lonardo A, Maki PM, McCullough LD, Regitz-Zagrosek V, Regensteiner JG, Rubin JB, Sandberg K, Suzuki A. Sex and gender: modifiers of health, disease, and medicine. Lancet. 2020 Aug 22;396(10250):565-582. doi: 10.1016/S0140-6736(20)31561-0. Erratum in: Lancet. 2020 Sep 5;396(10252):668. PMID: 32828189; PMCID: PMC7440877.

McCarthy MM. A new view of sexual differentiation of mammalian brain. J Comp Physiol A Neuroethol Sens Neural Behav Physiol. 2020 May;206(3):369-378. doi: 10.1007/s00359-019-01376-8. Epub 2019 Nov 8. PMID: 31705197; PMCID: PMC7196030.

Nielsen MW, Stefanick ML, Peragine D, Neilands TB, Ioannidis JPA, Pilote L, Prochaska JJ, Cullen MR, Einstein G, Klinge I, LeBlanc H, Paik HY, Schiebinger L. Gender-related variables for health research. Biol Sex Differ. 2021 Feb 22;12(1):23. doi: 10.1186/s13293-021-00366-3. PMID: 33618769; PMCID: PMC7898259.

Polderman TJC, Kreukels BPC, Irwig MS, Beach L, Chan YM, Derks EM, Esteva I, Ehrenfeld J, Heijer MD, Posthuma D, Raynor L, Tishelman A, Davis LK; International Gender Diversity Genomics Consortium. The Biological Contributions to Gender Identity and Gender Diversity: Bringing Data to the Table. Behav Genet. 2018 Mar;48(2):95-108. doi: 10.1007/s10519-018-9889-z. Epub 2018 Feb 19. PMID: 29460079.

Reale C, Invernizzi F, Panteghini C, Garavaglia B. Genetics, sex, and gender. J Neurosci Res. 2023 May;101(5):553-562. doi: 10.1002/jnr.24945. Epub 2021 Sep 9. PMID: 34498752.

Regitz-Zagrosek V. Sex and gender differences inhealth. Science & Society Series on Sex and Science. EMBO Rep. 2012 Jun 29;13(7):596-603. doi: 10.1038/embor.2012.87. PMID: 22699937; PMCID: PMC3388783.

Rojek MK, Jenkins MR. Improving Medical Education Using a Sex- and Gender-Based Medicine Lens. J Womens Health (Larchmt). 2016 Oct;25(10):985-989. doi: 10.1089/jwh.2016.5948. Epub 2016 Jul 22. PMID: 27448189.

Thompson K, Peters S, Woodward M, Carcel C, Norton R. Reporting sex and gender in medical research. Lancet. 2019 May 18;393(10185):2038. doi: 10.1016/S0140-6736(19)31041-4. PMID: 31106752.

Valls-Llobet, Carme (2021). Mujeres invisibles para la medicina. Madrid: Capitán Swing.

Software

1. Medicine sensitive to sex and gender. *Carmen Valls i Llobet*
2. Incorporation of the gender perspective in health. *Lucia Artazcoz Lazcano*
3. Gender perspective in research. *Anna Santamaria*
4. Medical equipment. *Raquel Canovas Paradell*
5. Therapeutics. *Maria Queralt Gorgas*
6. Pain. *Francisco Xavier Medel*
7. Sexual and reproductive health. *Maria Goya*
8. Mental Health. *Gemma Parramon Puig*
9. Medical Pathology I: Neurology. *Patricia Pozo Rosich*
10. Medical Pathology II: Cardiology. *Antonia Sambola*
11. Medical Pathology III: Endocrinology. *Andreea Ciudin*
12. Medical Pathology IV: Cancer. *Enriqueta Felip.*
13. Medical Pathology V: Autoimmune diseases. *Albert Selva*
14. Surgical Pathology I. General Surgery. *Ramon Villalonga*
15. Addressing gender violence within the consultation. *Maia Brik*

Language list

Information on the teaching languages can be checked on the CONTENTS section of the guide.