Universitat de Lleida

DEGREE CURRICULUM

NUTRITION IN THE CRITICALLY ILL AND DEPENDENT PATIENT

Coordination: HERNÁNDEZ GARCÍA, CRISTIAN DIDIER

Academic year 2023-24

NUTRITION IN THE CRITICALLY ILL AND DEPEND... 2023-24

Subject's general information

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<tr><td>Subject name</td><td>NUTRITION IN THE CRITICALLY ILL AND DEPENDENT PATIENT</td></tr>
<tr><td>Code</td><td>102793</td></tr>
<tr><td>Semester</td><td>2nd Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
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<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Double bachelor's degree: Degree in Human Nutrition and Diethetics and Degree in Physiotherapy</td><td>4</td><td>COMPULSORY</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>6</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
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<tr><th>Activity type</th><th>PRACLIN</th><th>PRAULA</th><th>TEORIA</th></tr>
<tr><td>Number of credits</td><td>1</td><td>2</td><td>3</td></tr>
<tr><td>Number of groups</td><td>2</td><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>HERNÁNDEZ GARCÍA, CRISTIAN DIDIER</td></tr>
<tr><td>Department</td><td>MEDICINE AND SURGERY</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>Critical component: 3 credits
Dependent component: 3 credits</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Spanish / Catalan</td></tr>
<tr><td>Distribution of credits</td><td>Global student hours: 150 hours
In-person hours: 60 hours
Student's self-study hours: 90 hours</td></tr>
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NUTRITION IN THE CRITICALLY ILL AND DEPEND... 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
DURAN ALERT, PATRICIA	patricia.duran@udl.cat	3	
HERNÁNDEZ GARCÍA, CRISTIAN DIDIER	didier.hernandez@udl.cat	3,5	
MARTINEZ OLMEDO, NAILA	naila.martinez@udl.cat	,5	

Subject's extra information

Critical patients are a special group of individuals who often require vital support at multiple levels. A proper nutritional status is a fundamental condition for their chances of recovery. On the other hand, nutrition in these types of patients is usually very complicated and difficult, with a high percentage relying on artificial nutrition via enteral and/or parenteral routes. Nowadays, nutritional support is a crucial part of treatment for critical patients and a common technique in intensive care units.

Another group of special patients includes individuals with decreased functional activity and cognitive impairment, who are often at high risk of having poor nutritional status. Functional dependence, which is very common in older individuals and degenerative diseases, can cause serious problems in achieving proper nutrition. Additionally, cognitive deterioration is also a significant risk factor for malnutrition. Dependence is, therefore, a nutritional risk factor, and that's why assessment, prevention, and nutritional support are absolutely necessary in this type of patients.

This elective subject in the 4th year of the double degree program in Human Nutrition and Dietetics and Physiotherapy aims to delve into the knowledge and management of these two special patient groups, in which proper nutritional support plays a key role in their progression.

Learning objectives

- Analyze the close relationship between nutritional status and health, as well as the importance of nutrition on immunity and metabolic stress in both health and disease.
- Understand the negative implications of malnutrition on the progression of severe illnesses and in dependent patients.
- Familiarize with the nutritional characteristics of major critical illnesses and the different possibilities of specific artificial nutritional support in each case.
- Identify the degree and type of dependence and understand the nutritional deficits associated with it.
- Learn to assess the nutritional needs of dependent patients.
- Analyze and adapt appropriate nutritional interventions to each individual case.
- Understand the key aspects of home enteral and parenteral nutrition, including indications, monitoring, and follow-up protocols.

Competences

Specific Competences:

CE27 Evaluate and calculate nutritional requirements in both health and disease at any stage of the life cycle.

CE34 Understand the pathophysiological aspects of nutrition-related diseases.

CE35 Identify dietetic-nutritional problems in patients, as well as risk factors.

CE36 Develop and interpret a dietary history in both healthy and ill subjects.

CE37 Interpret a clinical history.

CE38 Understand and use terminology employed in health sciences.

CE39 Interpret and integrate clinical, biochemical, and pharmacological data in the nutritional assessment and dietary-nutritional treatment of patients.

CE40 Plan, implement, and evaluate therapeutic diets for individuals and/or groups.

CE43 Acquire knowledge of different techniques and products of basic and advanced nutritional support.

CE44 Develop and implement dietary-nutritional transition plans.

General Competences:

CG2. Develop the profession with respect for other healthcare professionals, acquiring skills to work in a team.

CG3. Recognize one's own limitations and the need to maintain and update professional competence, placing special importance on autonomous and continuous learning of new knowledge, products, and techniques in nutrition and dietetics, as well as a motivation for quality.

CG5. Know, critically evaluate, and know how to use and apply sources of information related to nutrition, diet, lifestyles, and health aspects.

CG6. Understand the limits of the profession and its competences, identifying when interdisciplinary treatment or referral to another professional is necessary.

Basic Competences:

CB3. Have the ability to gather and interpret relevant data (usually within their field of study) to make judgments that include reflection on relevant social, scientific, or ethical issues.

CB5. Develop the necessary learning skills to undertake further studies with a high degree of autonomy.

Transversal Competences of the UdL:

CT5. Acquire essential notions of scientific thinking.

Subject contents

Nº	Activity:	Hours	% of face-to-face sessions:
1	Lectures	75	40
6	Seminars	37.5	40
9	Clinical practice	37.5	40
	TOTAL	**150**	

THEORETICAL CONTENTS

Part 1. NUTRITION IN CRITICAL PATIENTS

Tema	Descripción	Horas	Profesor
1	Nutritional assessment, risk of malnutrition in critical patients, calculation of requirements, and nutritional support methods. Course Introduction.	2	C. Didier
2	Metabolic and nutritional issues in critical patients. Metabolic stress and acute aggression.	1	C. Didier
3	Nutritional support for immunocompromised patients. Pharmaconutrition.	1	C. Didier
4	Nutritional support in eating disorders.	2	C. Didier
5	Nutritional support in septic patients.	1	C. Didier
6	Nutritional support for polytraumatized and severely burned patients.	1	C. Didier
7	Nutritional support for surgical patients.	1	C. Didier
8	Stress hyperglycemia and diabetes mellitus.	2	C. Didier
9	Nutritional support in patients with acute and chronic respiratory failure. Invasive and non-invasive mechanical ventilation.	1	C. Didier
10	Nutritional support in patients with acute and chronic renal failure. Continuous hemofiltration and hemodialysis.	1	C. Didier
11	Nutritional support in patients with acute and chronic liver failure. Acute and chronic pancreatitis.	1	C. Didier
12	Nutritional support for critically ill patients with morbid obesity.	1	C. Didier
13	Nutritional support for oncology and hematology patients.	1	C. Didier
14	Artificial nutrition in pediatrics. Premature and low birth weight patients.	4	N. Martínez

Parte 2. NUTRICIÓN EN ENFERMOS DEPENDIENTES

Tema	Descripción	Horas	Profesora
1	General considerations on dependence. Concept of dependence and classification. Diseases that most frequently cause situations of dependence.	1	P. Duran
2	Tools for assessing the degree of dependence. Scales and questionnaires. Typification of the degree and type of dependence.	1	P. Duran
3	Common nutritional problems in dependent patients. Degree of autonomy for self-feeding. Feeding management issues and problems with chewing/swallowing. Nutrition in bedridden patients. Secondary complications: pressure ulcers. Nutritional treatment of pressure ulcers.	2	P. Duran
4	General aspects of nutrition in dependent patients: dietary modifications. Knowledge of dietary strategies to enrich nutrition in cases of malnutrition.	2	P. Duran
5	Use of nutritional supplements and home artificial nutrition in dependent patients. Management and types of oral nutritional supplementation. Management and types of artificial nutrition. Most common clinical situations.	2	P. Duran
6	Nutrition in patients with dysphagia. Diseases and clinical situations that most frequently cause dysphagia. Understanding how screening and detection of dysphagia are carried out. Dietary strategies to modify the texture of food in patients with dysphagia.	3	P. Duran

7	Nutrition in elderly patients. Neurological problems. Nutritional issues in these patients. Dietary strategies.	2	P. Duran
8	Nutrition in patients with cancer. Nutritional implications according to tumor location. Common nutritional problems in chronic-phase oncology patients. Dietary strategies.	2	P. Duran
9	Nutrition in dependent patients in pediatric age. Diseases in pediatric age that cause nutritional problems. Most frequent nutritional problems in pediatric age. Possibilities of artificial nutrition. Pediatric home enteral nutrition.	2	P. Duran
10	Ethical issues related to nutrition in terminally ill patients.	3	P. Duran

PRACTICAL CONTENTS

Seminars

A total of 20 hours of seminars/practical sessions will be scheduled, divided into 10 sessions of 2 hours each. These will be conducted in groups of 20 students.

Seminars/Practical sessions for critical patients:

Seminar 1: Screening, supplements, and nutritional assessment.

Seminar 2: Clinical cases of eating disorders (practical session).

Seminar 3: Diabetes, hyperglycemia, and dietary and nutritional support management (practical session).

Seminar 4: Renal patient, dialysis, and dietary treatment.

Seminar 5: Oral presentation of projects.

Seminars for dependent patients:

Seminar 1: Evaluation of the degree of dependence.

Seminar 2: Clinical case of pressure ulcers.

Seminar 3: Texture modification workshop and clinical case of dysphagia.

Seminar 4: Clinical case of neurological patient clinical case.

Seminar 5: Oral presentation of projects.

Methodology

Activities	**objective**	**Description**
Lectures (L)	**1**	• Acquisition of knowledge about nutrition and dependent diseases. Importance of artificial nutrition in critically ill patients. • Assessment of dependence and its nutritional problems.
Seminars (Sem)	**1,2**	• Understanding the nutritional status and designing a scheme for artificial nutrition in critically ill patients..

Clinical practice (CP)	**1,2**	• Inclusion of anthropometric values as part of the nutritional status assessment. • Evaluation of real patients and implementation of a nutritional support program..

Development plan

The course development plan mainly consists of:

1. Lectures: These sessions focus on acquiring theoretical knowledge and provide a space for debate and teamwork to develop skills and the learned content.
2. Seminars and practical sessions: These activities provide an opportunity to apply the learned content through real-life cases, allowing students to gain practical experience.
3. Teamwork projects: These projects promote interdisciplinary collaboration and mutual learning among students, fostering a collaborative learning environment.

Overall, the combination of lectures, seminars, practical sessions, and teamwork projects enhances students' understanding of the subject matter and helps them develop essential skills for their future professional practice.

Evaluation

Nº	Evaluation system	Minimum Weight	Maximum Weigh
1	Written exams on theoretical content and concepts	30	60
2	Tests related to practical activities or problem-solving	20	40
4	Assignment development	20	20

• The final grade will be the sum of the different evaluated aspects, with 50% for the critical part and 50% for the dependent part. Failing one of the parts results in failing the course:

Critical Part

- Conceptual and theoretical knowledge will be evaluated through a multiple-choice test. The result obtained in this exam will constitute 20% of the final grade. A minimum grade of 5 is required to pass. If a student fails, they can take the second opportunity exam. Incorrect answers do not deduct points.
- Completion and participation in all scheduled practical activities will represent 15% of the final grade. The evaluation of practical content will be done through controlled attendance and evaluation of directed assignments with class presentations.
- Continuous evaluation will be conducted through 10 group assignments to be solved during or after theoretical classes (15% of the grade). The activities section will be used for solving the cases.

Dependent Part

- Conceptual and theoretical knowledge will be evaluated through a multiple-choice test and a clinical case

resolution. The result obtained in this exam will constitute 20% of the final grade. A minimum grade of 5 is required to pass. If a student fails, they can take the second opportunity exam. Incorrect answers do not deduct points.

- Completion and participation in all scheduled practical activities will represent 30% of the final grade. The evaluation of practical content will be done through controlled attendance and evaluation of directed assignments with class presentations.
- Seminars have mandatory attendance.

Bibliography

books

- Celaya Pérez S (ed). Tratado de nutrición artificial. Tomos I y II. Grupo Aula Médica. Madrid, 1998.
- Gil, Angel. Tratado de Nutrición, 3ª edición. Tomos I, II, III y IV. Editorial médica panameriacana. Madrid 2017.
- Salas, A. Boada, R. Trallero, ME. Saló eds. Nutrición y dietética clínica. Doyma. Barcelona 2000.

internet

http://www.senpe.com/

http://www.agapea.com/Nutricion-clinica-Nutricion-parenteral-n36303i.htm

http://www.bbraun.es/index.cfm?D8A75C0926134D3DAD40170095598436

http://www.sefh.es/revistas/vol19/n6/347_350.PDF

http://www.espen.org/default.asp?Ticker=Y

http://www.nutritioncare.org/

http://www.senc.es/

http://www.fesnad.org/

http://www.sennutricion.org/

Journals

Journal of parenteral and enteral nutrition: http://jpen.aspenjournals.org/contents-by-date.0.shtml

Nutrición hospitalaria: http://www.grupoaulamedica.com/web/nutricion.cfm