Course Unit	Pharmacology and Pharmacotherapy			Field of study	Biology and Biochemistry		
Bachelor in	Nursing			School	School of Health		
Academic Year	2022/2023	Year of study	2	Level	1-2	ECTS credits	5.0
Type	Semestral	Semester	1	Code	9500-698-2106-00-22		

Workload (hours)	135	Contact hours	T -	TP 60	PL -	TC -	S -	E -	OT -	O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s): Carlos Pires Magalhães, Joao Ricardo Miranda da Cruz

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. understand the interaction organism-drug and drug-organism (pharmacokinetics and pharmacodynamics)
2. describe the pharmacological characteristics of the main groups of medicinal products
3. understand and describe the mechanisms of action of the main drug groups
4. recognize the most frequent adverse reactions of the major drug groups
5. understand the interrelationship of medicines
6. actively participate in the practical context, in the evaluation and control of the effects of drugs (therapeutic and adverse effects).

Prerequisites

Before the course unit the learner is expected to be able to:
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Course contents

Importance of the discipline to the profession. Principles of pharmacokinetics and pharmacodynamics. Pharmacotherapeutic interventions of regulation and control in: neurotransmitters action; CNS; autacoids functions; calcium entry blockers; cardiovascular; respiratory; digestive; hormonal; renal; infectious and neoplastic processes; blood and immune functions; and pharmacological interactions.

Course contents (extended version)

1. Pharmacology and Pharmacotherapy; Importance of the subject for the nursing profession.
   - Concepts and objectives. Notion of drug. Nature and origin of drugs. Pharmaceutical forms.
   - Routes of administration: interferences in pharmacokinetics and pharmacodynamics;
   - Self-medication problem. Rational use of drugs. Steps of clinical therapy.
2. Notions and principles of pharmacokinetics and pharmacodynamics:
   - Notions of pharmacokinetics: - General Mechanisms of Drug Actions.
   - Notions of pharmacodynamics: - General Mechanisms of Drug Actions.
3. Pharmacotherapeutic interventions to control the action of neurotransmitters:
   - Notion of mediators and mechanisms of action agonist-receptor and antagonist-receptor relationship;
   - Cholinergic system: - cholinergic transmission; - Cholinergic agonists and antagonists;
   - Adrenergic system: - adrenergic transmission; - adrenergic agonists and antagonists;
   - Dopaminergic system: dopaminergic receptors: pharmacological drugs and therapeutic use of dopamine.
4. Pharmacotherapy for regulation and control thecentral nervous system action using:
   - Stimulant drugs of the central nervous system;
   - Pharmacological methods of controlling the action mechanisms;
   - Central acting analgesia drugs and their antagonists;
   - Non-steroidal anti-inflammatory analgesic, antipyretic and anti-inflammatory drugs;
   - General anesthetic drugs and local anesthetics;
   - Antiepileptic drugs; antiparkinsonian drugs;
   - Cannabinoid drugs;
   - Pharmacological drugs to control addiction and addiction behavior;
   - Anxiolytic and sedative-hypnotic drugs; antipsychotic drugs; treatment mood disorders;
   - Drugs for the treatment of dementias.
5. Pharmacotherapy using mechanisms and control drugs - autocoids:
   - Histamine and antihistamines;
   - 5-hydroxytryptamine;
   - Eicosanoids: prostaglandins, thromboxanes and leukotrienes;
   - Angiotensin and renin angiotensin system;
   - Kinins; - natriuretic peptides; - others.
6. Pharmacotherapy using calcium blockers:
   - Pharmacological characteristics of calcium blockers.
7. Pharmacotherapy of control and regulation of cardiovascular system functions
   - Pharmacological data on drugs used without heart failure control;
   - Pharmacological evidence of used drugs without control and regulation of heart rate;
   - Pharmacological drugs used as antianginal agents;
   - Pharmacological conditions of drugs used as antihypertensives.
8. Pharmacotherapy for control and regulation of kidney functions:
   - Pharmacological drugs used as diuretics.
9. Pharmacotherapy for control and regulation of respiratory system functions
   - Pharmacological use of drugs used as boncodilators;
   - Pharmacological characteristics of drugs used as antiasthmatics;
   - Pharmacological characteristics of drugs used as antitussives and expecorators.
10. Pharmacotherapy for control and regulation of digestive tract functions:
   - Pharmacological treatment of antiulcer drugs;
   - Pharmacological inputs of gastrointestinal motility modifying drugs;
   - Pharmacological effects of bile modulators and vesicular motility.
11. Pharmacotherapy for control and regulation of hormonal function:
   - Pharmacological characteristics of adrenocorticotrophic hormone and corticosteroids;
   - Pharmacological conditions of insulin and other antidiabetics;
   - Pharmacological characterization of hormones regulating sexual function;
   - Pharmacological characterization of hormones regulating the thyroid;
   - Pharmacological characterization of hormones regulating bone metabolism.
12. Pharmacotherapy for control and regulation of infectious processes
   - Pharmacological characterization of drugs with antibacterial properties;
   - Pharmacological characterization of drugs with antifungal properties;
   - Pharmacological characterization of drugs with antiviral properties;

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Course contents (extended version)

- Pharmacological characterization of drugs with anti-helminthic properties.
13. Pharmacotherapy for control and regulation of neoplastic processes:
- Pharmacological characterization of drugs with antineoplastic properties.
14. Pharmacotherapy for control and regulation of blood constitution and functions:
- Pharmacological characterization of drugs with hematose modifying properties;
- Pharmacological characterization of drugs used in the control and correction of anemias;
- Pharmacological characterization of drugs used in the control of hyperlipoproteinemias.
15. Pharmacotherapy for control and regulation of immunological functions:
- Pharmacological characterization of drugs used in the control of the immune system.
16. Pharmacotherapeutic interventions for regulation and control of pharmacological interactions:
- Drug interactions.

Recommended reading

1. Abrams, A. C. (2006). Farmacoterapia Clinica: Princípios para a Prática de Enfermagem (7ª ed.). Editora Guanabara Koogan.
2. Clayton, B. D. , & Stock, Y. (2012). Farmacologia na Prática de Enfermagem (13ª ed.). Elsevier Editora.
3. Golan, D. E. , Tashjian, A. H. , Armstrong, E. J. & Armstrong, A. W. (2014). Princípios de Farmacologia: A base Fisiopatológica da Farmacologia (3ª ed.). Editora Guanabara Koogan.
4. Guareschi, A.P., Carvalho, L.V., & Salati, M.I. (2017). Medicamentos em Enfermagem: Farmacologia e Administração. Editora Guanabara Koogan
5. Vallerand, A. H. , & Sanoski, C. A. , & Deglin, J. H. (2016). Guia Farmacológico para Enfermeiros. (14ª ed). Lusodidata.

Teaching and learning methods

The classes are of theoretical, theoretical-practical, tutorial orientation and laboratory practice, using strategies of analysis, debate and discussion on case studies and clinical simulations, with application of demonstrative techniques, oral communication and multimedia projection, of topics promoting individual reflection and stimulating communication and interdisciplinary relationship.

Assessment methods

1. Alternative 1 - (Regular, Student Worker) (Final)
- Final Written Exam - 100% (Final Written Exam)
2. Alternative 2 - (Regular, Student Worker) (Supplementary, Special)
- Final Written Exam - 100% (Final Written Exam)

Language of instruction

Portuguese

Electronic validation

Carlos Pires Magalhães	Maria Cristina Martins Teixeira	Ana Maria Nunes Português Galvão	Adília Maria Pires da Silva Fernandes
16-11-2022	19-11-2022	19-11-2022	20-11-2022

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