![ipb - INSTITUTO POLITÉCNICO DE BRAGANÇA]

Course Unit	Methods and Technics of Research			Field of study	Health	
Bachelor in	Gerontology			School	School of Health	
Academic Year	2023/2024	Year of study	3	Level	1-3	ECTS credits 8.0
Type	Semestral	Semester	1	Code	9833-346-3104-00-23	

Workload (hours)	216	Contact hours	T	-	TP	80	PL	12	TC	-	S	-	E	-	OT	13	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)	Fernanda Moura Lanza, Manuel Alberto Morais Brás, Maria Cristina Martins Teixeira

Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:
1. Know a set of concepts, and theories and reasoning about research. Understand the relevance of Research for Gerontology and the development of the respective profession.
2. To know and understand the different paradigms, types and methods of research (Quantitative vs. Qualitative)
3. Understand and master the phases / stages of the research process
4. To recognize the epistemological character regarding the limits and conditions of the use of the various methods of health research and Gerontology.
5. Demonstrate an understanding of the main ethical issues that arise, both in the preparation of the proposal and in the structuring and investigation.
6. Apply in practice the sequence of steps in the research process and activities characteristic of scientific research. Develop a research project.
7. To know basic statistical methods applied to univariate or bivariate data analysis
8. To manage statistical software for data analysis

Prerequisites

Before the course unit the learner is expected to be able to:
has not

Course contents

Importance of research to a scientific area / profession of gerontology. General aspects of research methodology. What differentiates the scientific method from the common sense. Ways of acquiring knowledge. Quantitative versus qualitative research. Research Methods and Drawings. Population and Sample. Types of Sampling. Phases and Stages of the Investigation Process. Ethical Aspects of Research. Research Project. Basic statistical methods Descriptive and inferential statistics: descriptive.

Course contents (extended version)

1. Importance of research to a scientific area / profession of Gerontology.
2. General aspects of research methodology
   - Forms, methods acquisition of knowledge, difference between common sense and scientific knowledge
   - Forms and methods of acquiring knowledge
   - Deductive reasoning versus inductive reasoning
3. Epistemological paradigms and health research strategies
   - Quantitative Paradigm: Types of studies Research question Objectives and Research Assumptions
   - Population Sample
   - Types of Samplings: Probabilistic and Non-Probabilistic
   - Data collection instruments Pre test
   - qualitative paradigm
   - Techniques and data collection tools
   - Content analysis
4. Phases or stages of the research process
   - conceptual phase
   - methodological phase
   - empirical phase
5. Approaches in the treatment of data (quantitative vs. qualitative)
   - Data Analysis: Application and interpretation of the statistical techniques
   - Content analysis
6. Ethical principles in health research
   - Declaration of Helsinki
   - Permit institutions where the research is carried (ethics committees)
   - informed consent
   - Procedures on the authorship of the results. Plagiarism
7. Develop a research project
   - Title Index
   - Introduction
   - Theoretical framework (state of the art) Research question Research Objectives and Hypotheses
   - Methodology
   - Contextualization
   - Research design (type of study) Research question Study objectives
   - Dependent variable Independent variable Research hypotheses
   - Population Sample Type of sampling (calculation of sample size mercy error samples AP)
   - Instruments of data collection and Pre-test. Data analysis Activity timeline
   - Ethical considerations. References. Schedule of activities.
8. Basic statistics. Descriptive and inferential statistics.
   - Descriptive Statistics for categorical variables: absolute, relative and cumulative frequencies
   - Descriptive Statistics for quantitative variables: measures of central tendency and dispersion
   - Tables and graphics to present results. Boxplot and histogram
   - Statistical inference: Confidence interals for mean and for proportion.
   - Significance test: s Qui square test, Student's t test, Mann-Whitney, ANOVA and Kruskal-Wallis tests
   - Analysis of normal distribution
9. Using statistical software for data analysis: Excel, WinPepi

Recommended reading

1. Ribeiro, J. L. P. (2010). Metodologia de Investigação em psicologia e saúde. (3ª ed.). Lisboa: Livpsic. Psicologia
2. Fortin, M. F. , Côté J. , & Filion, F. (2009). Fundamento e etapas do processo de Investigação. Loures: Lusodidacta
3. Coutinho, C. P. (2013). Metodologia de investigação em ciências sociais e humanas: teoria e prática. Coimbra: Almedina

Recommended reading

4. Cunha, G. , Eiras, M. , Teixeira, N. (2011) Bioestatística e Qualidade na Saúde. Lisboa: LIDEL
5. Pestana, H. & Gageiro, J. (1998). Análise de Dados para Ciências Sociais. A complementaridade do SPSS. Lisboa: Sílabo

Teaching and learning methods

Sessions Theoretical and practical guidelines tutorials and seminars, adequacy of methodological strategies focused on students' reflection processes: reading times; analysis of scientific texts and preparation of summaries, discussions and debates; Exhibition in classroom-based work activities prior consultation. Methodology - Expository, Reflective, Interactive

Assessment methods

1. The evaluation will be carried out in two stages - (Regular, Student Worker) (Final)
    - Development Topics - 50% (Examination and research project (individual or group), with presentation in the classroom)
    - Practical Work - 50% (Practice exam questions on statistical methods)
2. Final examination with assessment of all matter - (Regular, Student Worker) (Supplementary, Special)
    - Final Written Exam - 100% (Proof of assessment of knowledge on the subjects taught)

Language of instruction

Portuguese

Electronic validation

Fernanda Moura Lanza, Manuel Alberto Morais Brás, Maria Cristina Martins Teixeira	Hélder Jaime Fernandes	Ana Maria Nunes Português Galvão	Adília Maria Pires da Silva Fernandes
06-12-2023	11-12-2023	11-12-2023	11-12-2023