Faculdade de Psicologia
UNIVERSIDADE DE LISBOA

COURSE UNIT INFORMATION SHEET (*SYLLABUS*)

2022/2023

Study Programme Post Graduate Course on Systematic Review and Meta-analysis

Name

Systematic Review and Meta-analysis

Teaching staff
(Also indicate the Professor in charge)

Ana Isabel Pereira (Professor in charge)

Ana Isabel Gomes

Cláudia Camilo

ECTS

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Functioning

24 hours of theoretical-practical lessons and 6 hours of tutorial guidance

Learning goals

To provide students with knowledge about the characteristics and different stages of a systematic literature review and meta-analysis, as well as the respective methodological procedures

To develop, in the students, research skills related to the elaboration of bibliographical research, data extraction and analysis, and the quality assessment of the studies and risk of bias

To promote knowledge on planning, conducting, and interpreting meta-analysis of studies with different research designs

Skills to be developed

1. Identify the main characteristics of a systematic literature review
2. Define the scope of the systematic review and formulate appropriate research questions
3. Outline, develop, and implement a literature search protocol/strategy
4. Select and use methods and tools for data management, extraction, and analysis/synthesis
5. Select and use scales and tools for assessing study quality and the risk of bias

6. Apply PRISMA guidelines in the preparation of registration protocols and systematic review articles

7. Select and use statistical techniques of meta-analysis, univariate and multilevel, using different statistical software (JASP and R)

8. Apply methodological skills of exploring heterogeneity and potential biases

9. Know how to present, describe, and interpret the results of a systematic literature review and meta-analysis

Prerequisites (precedences) *

N.A.

Contents

1. Introduction to the systematic review of the literature

2. PRISMA guidelines for conducting systematic literature reviews considering different research designs

3. Planning steps: defining the scope and formulating the research questions; building the literature search protocol/strategy and defining inclusion/exclusion criteria

4. Stages of study selection and documentation using software

5. Methods and tools for analyzing study quality and risk of bias

6. Strategies for data extraction and analysis, description, and presentation of results

7. Introduction to different methods of meta-analysis, and from studies with different research designs

8. Data extraction from primary studies, effects conversion, and preparation of databases for meta-analysis

9. Univariate meta-analysis and multilevel meta-analysis models using JASP and R software

10. Quantification and exploration of heterogeneity and potential biases

11. Description and presentation of the meta-analysis results

Bibliography

Assink, M., & Wibbelink, C. J. M. (2016). Fitting three-level meta-analytic models in R: A step-by-step tutorial. *The Quantitative Methods for Psychology, 12*, 154–174. https://doi.org/10.20982/tqmp.12.3.p154

Aromataris E, Munn Z (Editors). *JBI Manual for Evidence Synthesis*. JBI, 2020. Available from https://synthesismanual.jbi.global. https://doi.org/10.46658/JBIMES-20-01

Boland, A., Cherry, M. G. & Dickson, R. (2017). *Doing a Systematic Review: a Student's Guide*. 2nd edition. California: SAGE Publications.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. (2021). *Introduction to meta-analysis*. John Wiley & Sons.

Grant, M. J., & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies.

Health Information & Libraries Journal, *26*(2), 91-108. https://doi.org/10.1111/j.1471-1842.2009.00848.x

Harrer, M., Cuijpers, P., Furukawa, T. A., & Ebert, D. D. (2021). *Doing Meta-Analysis with R: A Hands-On Guide*. Chapman & Hall/CRC Press.

Higgins, J. P. T., Thomas, J., Chandler, J., Cumpston, M., Li, T., Page, M. J. & Welch, V. A. (editors) (2021). *Cochrane Handbook for Systematic Reviews of Interventions* (version 6.2, updated February 2021). USA: The Cochrane Collaboration and John Wiley & Sons Ltd. Available from www.training.cochrane.org/handbook.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *International Journal of Surgery*, *88*, 105906. https://doi.org/10.1186/s13643-021-01626-4

Teaching methods

Theoretical-practical and tutorial classes using an expository methodology, practical demonstration of the preparation of materials and use of tools and software, and training of methodological procedures applied to the student's individual review project.

Evaluation Regimes (General and/or Alternative)

Final evaluation, with the submission of an individual report.

Evaluation Elements

(Dates due, weights, minimum required grades)

The course is approved upon submission of an individual report, consisting of the preparation of a protocol for the registration of a systematic literature review and meta-analysis, with a weighting of 100% of the evaluation. The individual work must be submitted within two weeks of the completion of the curricular part of the course. The minimum mark for approval is 9.5 points.

Rules for grade improvement

Grade improvement can be requested after the final assessment and involves a restructuring of the individual assignment, delivered two weeks after the publication of the notes.

Rules for students having previously failed the course unit *

N.A.

Requirements on attendance and punctuality

It is required to attend at least 80% of the classes. Attendance is given to the student according to the confirmation of their presence at the Zoom meeting in the software's report and their involvement in class (active participation, and completion of the exercises proposed in class and handing them in for the individual work report).

Rules for special students

(workers, elite athletes, student body leaders, military, fathers/mothers, with special needs) *

General rules of FP-UL.

Language of instruction

Portuguese (however, proficiency in English is fundamental for reading the bibliography and using tools and software).

Disciplinary violations and penalties

According to the Evaluation of Learning Regulation of the Faculty of Psychology of the University of Lisbon, the following behaviors are considered as disciplinary offenses subject to disciplinary action:
a) To use or attempt to use materials, information, notes, study resources or other objects and equipment not authorized in academic exercises;
b) To help or try to help a colleague in committing a disciplinary offense;
c) To submit the same written work for evaluation in different course units without permission from the instructors, even if with minor changes;
d) To present someone else's work as one's own;
e) To forge, or change without permission from the author, any information or citation in an academic work;
f)To interfere, change or attempt to change grades;
g) To try to prevent or interfere with the proper functioning of classes, research or other academic activities;
h) To make false accusations regarding instructors, governance bodies, other students or non-teaching staff of the FPUL;
i) To falsify signatures in attendance sheets, documents relating to evaluation elements or in any official document relating to an academic process or status.
Disciplinary offenses committed in any assessment element can lead to its annulment, and must be reported to the Pedagogical Council or, considering their gravity and repetition, may lead to other penalties, to be determined by the Rector of the University of Lisbon.

* If applicable