HRM 743 – Systematic Review Methods

1. Brief Description

This course covers the methods of comprehensive syntheses of research evidence. Rigorous review methods will be highlighted, such as searching for potentially relevant articles; selecting primary articles using explicit, reproducible criteria; appraisal of studies; quantitative data synthesis; and, interpretation. The course uses the framework provided by the GRADE Working Group to evaluate certainty of estimates and present and interpret evidence. The focus of the course is on systematic reviews of interventions, which typically include randomised trials and non-randomised studies that evaluate therapeutic interventions and outcomes. This focus is to ensure that students understand and apply the fundamental processes to conduct a systematic review. The process can be applied to other review topics and study designs (such as diagnostic accuracy and prognosis) which will be briefly covered in the course. Students are required to conduct a systematic review of an intervention during the course. However, students who wish to conduct reviews of other topics will need to ensure they have methodological support in addition to what is provided within the course.

2. Prerequisites

1. HRM 721 and HRM 702 (or permission of course coordinator)
2. one-page outline of the topic of systematic review approved by the course coordinator.

3. Course objectives

Students who successfully complete this course will have knowledge and skills related to concepts and methods of systematic reviews of interventions; and apply this knowledge and these skills to conduct a systematic review.

4. Course tutors and lecturers (to be updated)

Nancy Santesso, RD, MLIS, PhD (Course coordinator)
Assistant Professor, Department of Health Research Methods, Evidence, and Impact (McMaster University) Email: santesna@mcmaster.ca

Chloe Bedard (Tutorial assistant)
PhD Candidate, Health Research Methodology Programme; Email: bedardct@mcmaster.ca

Paul Alexander, PhD
Part-time Assistant Professor, Department of Health Research Methods, Evidence, and Impact (McMaster University)

Romina Brignardello-Petersen, DDS, MSc, PhD
Assistant Professor, Department of Health Research Methods, Evidence, and Impact (McMaster University)

Jan Brozek, MD, PhD
Associate Professor, Department of Health Research Methods, Evidence, and Impact (McMaster University)

Tahira Devji, PhD
Post-doctoral Fellow, Department of Health Research Methods, Evidence, and Impact (McMaster University)

Bram Rochwerg, MD, MSc
Assistant Professor, Department of Medicine, Division of Critical Care and Department of Health Research Methods, Evidence, and Impact (McMaster University)

Xiaomei Yao, PhD
Part-time Assistant Professor, Department of Health Research Methods, Evidence, and Impact (McMaster University)

Yuan (Ray) Zhang, BM, PhD
Part-time Assistant Professor, Department of Health Research Methods, Evidence, and Impact (McMaster University)

Session/Date	Topic	Tutorial	Assignment Due
1: January 9	Introduction to course and different reviews	Groups: Structure of systematic reviews and non-systematic reviews	Confirm review topic by searching for other reviews and updates (NOT AN ASSIGNMENT)
2: January 16	Develop the systematic review question and inclusion criteria	Groups: Discussion of student PICOs	-
3: January 23	Search and Screen studies	In class exercises	1 - Submit Background, PICO, inclusion/exclusion criteria (10%)
4: January 30	Risk of bias (RCT)	Groups: Use risk of bias tool for RCT	2 - Submit search strategy (10%)
5: February 6	Risk of bias (Non-RCT)	Groups: Use risk of bias tool for non-RCT	-
6: February 13	Data abstraction, forms, numbers	Groups: Practice data abstraction	-
February 20	NO CLASS: Semester break		-
7: February 27	Principles of meta-analysis	In class: Doing meta-analysis	3 - Submit risk of bias assessment (10%)
8: March 5	Narrative synthesis, heterogeneity and subgroups	Groups: Narrative synthesis and subgroups	-
9: March 12	Interpreting results and GRADE	Groups: Apply GRADE	-
10: March 19	Summaries of evidence and use	In-class: Summary of findings tables, GRADEpro	
11: March 26	Systematic review developments and issues	In-class: Student questions about review, etc.	4 – Submit a GRADE assessment (10%)
12: April 2	NO CLASS: HEI Research day		-
April 9	Students present methodological issue (0900 to 1600)		Presentation (10%)
April 16	Students present methodological issue (if necessary)		
April 21			5 - Submit systematic review (40%)

5. Student evaluation

Final marks are calculated based on assignments and participation in tutorials. Participation in tutorials includes preparation by reading required materials, applying principles, and engaging in conversation. Detailed descriptions of each assignment and marking scheme will be available in the course materials on Avenue.

Assignment 1: Background, PICO, inclusion/exclusion criteria (10%)
Assignment 2: Search strategy (10%)
Assignment 3: Risk of bias assessment (10%)
Assignment 4: GRADE assessment (10%)
Presentation: Methodological issue in systematic review (10%)
Assignment 5: Systematic review (40%)
Participation: Tutorials (10%)

Grades in graduate courses at McMaster University are reported as letter grades:
A+ = 90 to 100 (consistently outstanding)
A = 85 to 89 (overall superior quality)
A– = 80 to 84 (high achievement)
B+ = 77 to 79 (competent, but not consistently high quality)
B = 73 to 76 (satisfactory quality)
B– = 70 to 72 (only marginally acceptable)
F = failure (inadequate work)

6. Materials
The text book from which there are many readings is

Users' Guide to the Medical Literature: A Manual for Evidence-Based Clinical Practice. Third Edition. Gordon Guyatt, Drummond Rennie, Maureen O. Meade, Deborah J Cook. *American Medical Association.* 2014.

Additional readings are also required and are described in each Session outline.

7. Assignments
Assignments should be electronically submitted on Avenue to Learn in the corresponding folder. Please submit as a **word document** (do not send as PDF – we would like mentors to be able to add comments directly to the document). Assignments should be named "HRM 743 Assignment [insert #] [insert last name]"

8. Office Hours
The instructor will be available for weekly office hours in person or through various online platforms

Mondays from 0900 to 2100 (e.g., skype, facetime, whats app, phone):

To schedule a meeting, use the calendar invitation/share function through your email account to invite people; if the instructor is available, she will accept the invitation or otherwise decline and you will need to schedule a new time. When scheduling a meeting, please indicate what platform (e.g., skype, facetime, cell) you will be using.
Contact Information: Skype ID: nancy.santesso; cell number: 289 407 1505

Instructor is also available in the MDCL 3023 classroom before and after classes:

Thursdays from 1200 - 1300 and from 1600 – 1700 (depending if any one comes) MDCL 3023

For questions about course registration, contact Abir Abdulla at hrmasst@mcmaster.ca
For questions about logistics of the course, contact Chloe Bedard at bedardct@mcmaster.ca
For questions about course content, contact Nancy Santesso santesna@mcmaster.ca

When contacting us, please use 'HRM 743' in the subject line of the email.