SSDRF Academy

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Course: Systematic Review and Meta-Analysis.

Instructor: Dr. Munshi Naser Ibne Afzal

Batch: 1/A (Sat-Sun)

Course Outline

Class 1: Introduction to Systematic Reviews and Meta-Analysis

Overview: Definition and purpose of systematic reviews and meta-analysis.

Importance: Their role in evidence-based research.

Key Steps: Formulating a research question, protocol, search strategy, and eligibility criteria.

Software Overview: Introduction to MetaWin 3, Jamovi, Excel, JASP, and Comprehensive Meta-Analysis (CMA).

Class 2: Formulating Research Questions and Designing a Protocol

Research Question Development: PICO (Population, Intervention, Comparison, Outcome) framework.

Protocols: The importance of a well-defined protocol using PRISMA guidelines.

Hands-on Practice: Drafting a research question and setting up a protocol.

Assignment: Develop a research question and protocol using an example case.

Class 3: Literature Search and Data Extraction

Search Strategies: Database searches (e.g., PubMed, Cochrane Library) and setting up inclusion/exclusion criteria.

Data Management: Extracting and managing data with tools like EndNote, Rayyan QCRI, or Mendeley.

Hands-on Practice: Conducting a systematic literature search and data extraction.

Software Introduction: Using Excel for organizing and managing extracted data.

Class 4: Introduction to Meta-Analysis with Comprehensive Meta-Analysis (CMA)

CMA Overview: Introduction to Comprehensive Meta-Analysis software.

Conducting Meta-Analysis: Fixed effects and random effects models, heterogeneity, forest plots, and funnel plots in CMA.

Hands-on Practice: Importing data and performing a meta-analysis in CMA.

Assignment: Use CMA to analyze a sample dataset.

Class 5: Performing Meta-Analysis using JASP

Introduction to JASP: Setting up JASP and importing datasets.

Meta-Analysis in JASP: Running meta-analyses, creating forest plots, and interpreting results.

Hands-on Practice: Conduct a meta-analysis in JASP on a sample dataset.

Assignment: Use JASP to perform a meta-analysis on a selected dataset.

Class 6: Meta-Analysis using Jamovi

Introduction to Jamovi: Basics of Jamovi and its add-ons for meta-analysis.

Performing Meta-Analysis: Effect size calculations, fixed/random models, and visualizations.

Hands-on Practice: Conducting meta-analysis using Jamovi.

Assignment: Analyze a dataset using Jamovi and present the results.

Class 7: Meta-Analysis using MetaWin 3

Introduction to MetaWin 3: Overview of the software and its features for ecological and evolutionary studies.

Running Analyses: Meta-analysis with continuous and categorical data, handling variance, and creating summary plots.

Hands-on Practice: Perform a meta-analysis using MetaWin 3 on provided data.

Assignment: Use MetaWin 3 to analyze a sample dataset.

Class 8: Meta-Analysis using Excel

Introduction to Excel for Meta-Analysis: Using Excel functions to calculate effect sizes, variances, and confidence intervals.

Manual Meta-Analysis: Building fixed/random effect models, and creating forest plots and funnel plots in Excel.

Hands-on Practice: Conducting a simple meta-analysis in Excel.

Final Project: Submit a meta-analysis report using any one of the covered software (CMA, JASP, Jamovi, MetaWin 3, Excel).