

**TOPIC: A-34 RESEARCH**

| <b>PROBLEM</b>  | <b>KNOWLEDGE</b>  | <b>SKILLS/ATTITUDES</b>   | <b>LEARNING</b>      | <b>ASSESSMENT</b>    |
|---|---|---|----------------------|----------------------|
| 1. Literature evaluation                                    | How to critically appraise the primary literature (especially therapy, diagnostic and meta-analysis papers).  | Be able to search the common data bases (Medline, Embase, Cinahl and Cochrane Library)  | LP<br>LT<br>GT<br>PS | ME<br>FFAEM<br>MFAEM |
| 2. Which research design is best for the research question? | Common research designs: RCTs, Cohort studies, case studies.<br><br>Sample size estimation and power calculation  | Select the right design for the right question  | LP<br>LT<br>GT<br>PS | ME<br>FFAEM<br>MFAEM |
| 3. Statistical testing                                      | Hypothesis testing.<br>Understanding type I and II errors<br><br>Common parametric and non-parametric tests, p values.<br><br>Diagnostic test descriptions (sensitivity, specificity, likelihood ratios, ppv, npv)<br><br>Understand RR, AR, NNT<br><br>Confidence intervals. |   | LP<br>LT<br>GT<br>PS | ME<br>FFAEM<br>MFAEM |
| 4. Optional: Research question formulation.                 | Key characteristics of a good research question.<br><br>Hypothesis formulation/research design.<br><br>Ethical approval.<br>Application process.  | <u>Skills/Attitudes.</u><br><br>To be persistent with the research idea, seek help from experienced researchers.<br><br>To be able to use commonly available computer programmes e.g. SPSS. | LP<br>LT<br>GT<br>PS |                      |

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| 5. Optional: Publication. | To know the standard research paper layout.<br>Best BETS layout.                          | <u>Skills</u><br>To develop authorship skills working with experienced authors. | LP<br>LT<br>GT<br>PS |  |
| 6. Optional: Funding.     | To know the common funding sources, e.g. Faculty/BAEM, NHS R&D, MRC, Wellcome Foundation. |   |                      |  |