

## Critical Appraisal of Published Work

### Tips for the Academic Viva

1. Read the title of the paper carefully, and underline the key words.
2. Check the authors names, and try to determine their roles in the study and if their specialities are relevant for that paper, (e.g., a vascular surgeon doing a paper on colorectal cancer).
3. Read the Abstract and underline key words.
4. Read the whole paper and underline key sentences.
5. Use a multi-coloured pen and a ruler, and use different colours for the opposing arguments, e.g. Blue for good points about the paper, and Red for bad points about the paper.
6. Start your discussion by mentioning what type of a study or a paper it is.
7. Mention the institution from which the paper had originated (as "famous centres" might publish controversial papers).
8. Mention the relevance of the topic or the subject the paper is addressing & how common it is.
9. Examine the Reference section of the paper carefully, and check on how up-to-date the list of references are.
10. Check the tables, diagrams and statistics to determine how appropriate they are).
11. Discuss the design of the paper, and whether it is appropriate or not.
12. Mention all the good points about the paper first.
13. Then mention all the bad points about the paper and any faults in its design.
14. Mention what lessons can be learnt from this study.
15. What sort of evidence can this paper (or this study) offers.
16. Then determine whether the title of the paper is appropriate or not.
17. Any new messages or new lessons we can learn from this paper.
18. If you were to conduct this study, how would you change the design.
19. Finally, you would need to decide whether you would publish this paper or not (if you were the editor of the journal. Whether Yes or No, you would need to justify your decision. You can publish a bad paper, for controversial discussion.
20. Read about statistics before you go to the exam, e.g. sensitivity, specificity, data analysis, etc.
21. Usually, there are three types of papers used in the exam: one Good, one Average and one Poor. You need to determine which is which.
22. Read your own abstracts the night before your Viva, and be prepared to discuss the strength and the weakness of your study. The examiners aim is to see whether you know enough about your study, and whether you've done the work or not.

### Critical appraisal

- Who wrote the paper?
- Do they or the institution have a proven academic record?
- Is the paper interesting and relevant?

### Introduction

- Did the study introduction address the relevant points?
- Was the study original?
- Were the aims clearly stated?

### Methods

- Was an appropriate group of subjects studies?
- How were subjects recruited?
- What were the inclusion criteria?
- What were the exclusion criteria? Was the sample size justified?
- Was a power calculation performed? Was the study design appropriate?
- Review - systematic or meta-analysis
- Drug treatment - randomised controlled trail
- Prognosis - cohort study
- Causation - case - control study Were the study groups comparable?
- Demographics, baseline criteria etc Was the assignment of patients to treatments randomised?
- How was the randomisation performed
- Were the groups treated equally other than for the experimental intervention? Were the outcome measures stated and relevant? Were measurements valid and reliable?
- Were patients and healthcare workers 'blinded' to the treatment given? Were all patients entered into the study properly accounted for? Is there any missing data?
- Were side effects and adverse outcome documented? Was the duration and completeness of follow up appropriate?

### Statistics

- Were the statistical methods described?
- Does the tests chosen reflect the type of data
- Parametric versus parametric tests Were analyses performed on an intention to treat basis? Was systematic bias avoided or minimized?

### Results

- How large was the treatment effect?
- How precise was the estimate of the treatment effect?

### Discussion

- Were the aims of the study fulfilled?
- Were the sources of error discussed?
- Are the relevant findings justified?
- Are the conclusions of the paper justified?
- Are likely treatment benefits worth the potential harm or costs?
- What is the impact of the paper?
- Can the results be generalised to other populations?
- **What do you think of the paper?**