READING AND APPRAISAL OF JOURNAL ARTICLES

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WHY DO WE READ CLINICALS JOURNALS

- To impress others
- To keep abreast of professional news
- To understand pathobiology
- To find how handles a particular problems
- To find out whether to use a new diagnostic test
- To learn the clinical course and prognosis of a disorder
- To determine etiology or causation
- To distinguish useful from useless or even harmful therapy
- To study cost-effectiveness, quality of health care services.

Guide

- Look at the title
- Review the list of authors
- Read the summary
- Consider the site

APPROACHES TO AN ARTICLES

- **BROWSING OR SURVEILLANCE APPROACH - scan the literature to keep abreast of developments in some field of medicine & file for future reference**
- **PROBLEM-SOLVING APPROACH- generate solution to a clinical problem or management of specific patient.**
- **EXHAUSTIVE APPROACH- read all on the topic to assess, review etc.**

NEW DIAGNOSTIC TEST

- Was there an independent, blind comparison with a gold standard of diagnosis?
- Did the patient sample include an appropriate spectrum of mild and severe, treated and untreated, plus individuals with different but commonly confused disorder?
- Was the setting for the study and referral patent adequately described?
- Was the term normal defined sensibly?
- Was the contributions of a cluster or sequence of tests determined?
- Was it reproducible?
- Was the utility determined?

PROGNOSIS OF DISEASE

- **Was an inception cohort assembled?**
- **Was the referral pattern described?**
- **Was the complete follow-up achieved?**
- **Was the outcome criteria developed and used?**
- **Was the outcome assessment blind?**
- **Was adjustment for the extraneous prognostic factors carried out?**

CAUSATION

- **Is there evidence from true experiments in humans?**
- **Is the association strong?**
- **Is the associations consistent from study to study?**
- **Is the temporal relationship correct?**
- **Is there a dose response gradient?**
- **Does the association make epidemiologic sense?**
- **Does the association make biologic sense?**
- **Is the association specific?**
- **Is the association analogous to previously proven causal association?**

USELESS OR HARMFUL THERAPY

- **Was the assignment of patients treatments really randomized?**
- **Was the clinically relevant outcome reported?**
- **Were the patients recognizably similar to your own?**
- **Were both clinical and statistical significance considered?**
- **Is the therapeutic maneuver feasible in your practice?**
- **Were all patients who entered the study accounted for its conclusion?**

OUTLINE FOR CRITIQUE OF AN EPIDEMIOLOGICAL STUDY

Objective or hypothesis

1. **Purpose of study : Objectives of study; reasons it was done.**
2. **Subjects : What hypotheses were tested ?.**
3. **Reference Population : To whom do the investigators intend to generalize their results ? To whom should the findings be generalized ?.**

DESIGN OF THE INVESTIGATION

a. Type of study : Experimental, cohort, case-control, descriptive, case-report, etc. If the study was case-control or cohort, was the timing retrospective or prospective ?.

b. Subject : What subjects were used (number, age, sex, etc.). How were they selected ?.

c. Comparison groups : What was the nature of the control group or standard of comparison ?. How appropriate do you consider this to be ?.

d. Study size : Was the sample size adequate to give you confidence in the finding of “no association”?.

Bias

a. Selection bias : Were the groups under study comparable in terms of how subjects entered and remained in study groups ?.

b. Confounding : Was there any consideration of the control of potential confounding variable in the design of the study through matching or subject restriction ?

OBSERVATIONS

1. **Procedure : How are the variables in the study defined And measured, i.e. how were the data collected ?.**

2. **Definition of terms :**
   - Are definitions of diagnostic criteria, measurements and criteria of outcome sufficiently and criteria of outcome sufficiently unambiguous for the observations to be reproduced ?.

BIAS

a. **Observation bias :**
Were the groups under study comparable in term of measurement or mode of observation ?.

b. **Misclassification :**
Could there have been misclassification in the determination of the exposure or disease categories ?.

c. **Confounding :**
Was information recorded on variables that could confound the association under study so that control could be achieved in the analysis (if not achieved the design) ?.

ANALYSIS

1. Were the statistical procedures appropriate to the source and nature of the data ?.

2. Were the analyses correctly performed and interpreted ?. Should additional or different analyses have been performed ?.

3. Were there sufficient consideration in the analysis of the assessment and control of the effect of potential confounding factors ?.

INTERPRETATION OF DATA

Results :
State the major results and conclusions of the authors.

Interpretation :
What interpretations can be made of these results ?.

Could the results be due to chance ?.

How might bias have affected these results ?.
Consider specifically selection bias, observation bias and misclassification.

Are there uncontrolled confounding variables that could account for the association ?.

Is there evidence supporting the association being causal ?.

PRESENTATION OF FINDINGS

1. **Clarity : Are the findings presented clearly, objectively, and in sufficient detail to enable the reader to judge them for him/herself ?.**

2. **Consistency : Are the findings internally consistent i.e. Do the number add up, can be different tables be reconcilled, etc. ?.**

DISCUSSION AND SUGGESTION

- Are the conclusions justified and relevant?
- Are all objectives or hypothesis answered?
- Are all questions/ intentions answered
- What are the strengths and weaknesses of this study?
- How do you improve the study?

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