Scientific Writing

in Medical Sciences

(An Overview)

Types of Medical articles

- Original Article
- Review Article
- Case Reports
- Editorial
- Short Communication (short papers)
- Letter to The Editor

Hierarchy of studies

Methods: Quality Assessment, *Cont.*

- Example:

  Short compared with standard duration of antibiotic treatment for urinary tract infection: a systematic review of randomised controlled trials. *(Arch Dis Child 2002;87:118–123)*

Quality Assessment:

Two reviewers (MM and EH) assessed study quality without blinding to author or source using the criteria of the Cochrane Renal Group. Discrepancies were resolved through discussion. Quality items assessed were allocation concealment, intention to treat analysis, completeness of follow up, and blinding of participants, investigators, and outcome assessment since these may bias the underlying treatment effect.

The traditional IMRaD

- Introduction
- Methods
- Results
- Discussion

Main Components of an Article

- Introduction: Why did you start?
- Methods: What did you do?
- Results: What did you find?
- Discussion: What does it all mean?

A full paper may contain:

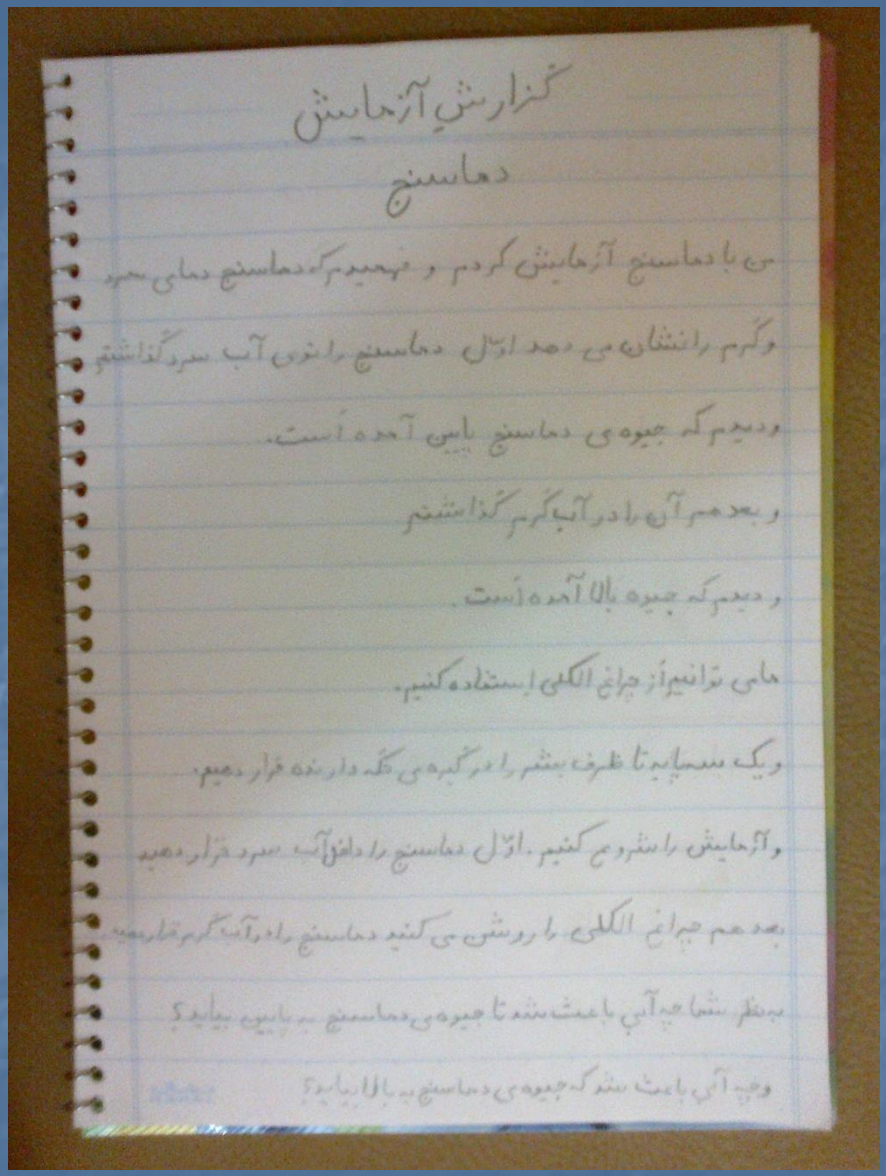
- Title
- Authors and Affiliation
- Abstract
- Introduction
- Methods
- Results
- Discussion
- Acknowledgments (optional)
- References

Methods

- The purpose of the methods section is to describe how you:
  - reached your objectives
  - obtained your results

- WWWWWH (what, who, where, why, when & how?)

- Simple
- Transparent
- Repeatable



Methods

- You need to give precise details of:
  - the study design
  - the methods that you used
  - how you analyzed the data
- Define variables
- You should also give some information of where the study was conducted
- In epidemiological paper or a paper concerned with environmental issues, you may need to give some information about the locations of the centres where the data were collected

Methods

Every measurement reported in the results section must have a description of the method used to obtain it

Methods

- The methods section should only be as long as is needed to describe the essential details
- Other researchers:
  - should be able to appraise your work **critically**
  - repeat your study exactly the way that you did it

Methods

- The headings that are used in methods sections, such as:
  - Participants
  - study design
  - specific methods
  - data analysis
  - etc.

Methods (Ethical Approval)

- Investigators should always document both:
  - the approval from the ethics committee
  - informed consent was obtained from each participant

- Many journals now decline to publish results from studies that do not include details of prior ethical approval

Methods (Ethical Approval)

- every paper must contain a statement about the protection of the participants
- the privacy of participants must always be respected
  - Even masking the eyes in a photograph is insufficient
  - written consent for photographs

Methods (Study design)

- The study design should have been clearly identified before the study even began
- Should be **easily** described in the methods section

Methods (Study design)

- It is important to state the design of your study because:
  - each study type has its own strengths and limitations in terms of controlling for bias or confounding
  - Each study design also dictates the type of statistical tests that are appropriate

Methods (Participants)

- how you recruited people
- sampling frame should be clearly described
- inclusion and exclusion criteria in detail

Methods (Participants)

- sample size and sample characteristics??

This information is probably better placed at the beginning of the Results section

Methods (Sample size)

- It is not always important to include details of your sample size calculations
- When the sample size is small
  - the results are rarely believable
  - the summary estimates lack precision
  - standard statistical methods may be inappropriate
  - generalisability of the results will be questionable

Methods (Questionnaires)

- you should give precise details of the questionnaires you used
- how they were:
  - Developed
  - Validated
  - Tested for repeatability
- The mode of administration:
  - self-administered
  - telephone-administered
  - interviewer-administered

Methods (Questionnaires)

- A valid questionnaire that is thoughtfully designed minimises:
  - measurement bias
  - the amount of missing or unusable information
- If your questionnaire has been ALREADY validated, always give a reference to the work

Methods (Interventions)

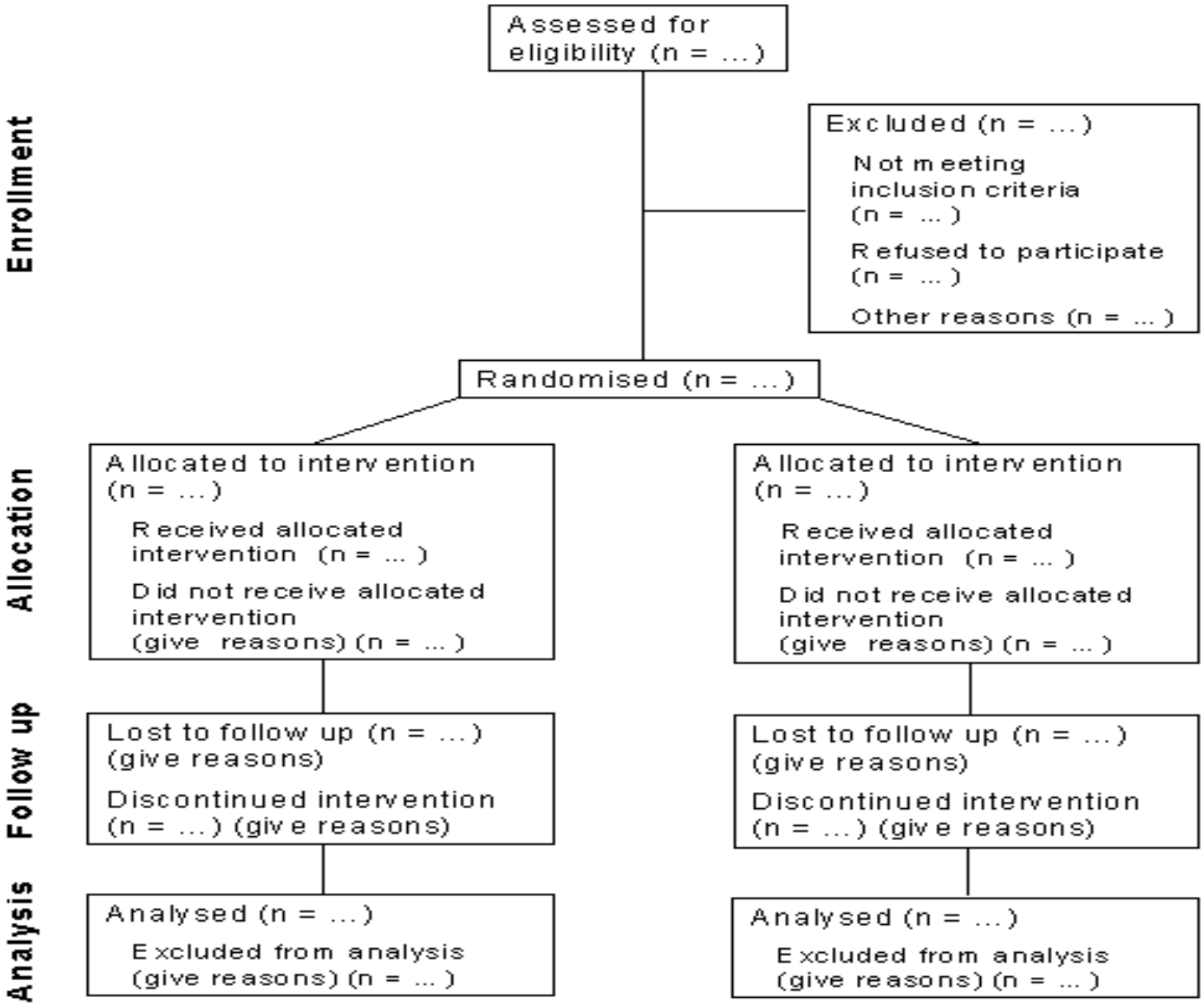
- In experimental studies, exact details of:
  - the interventions
  - how they were administered
  - the intervention of interest
  - the intervention, sham, or placebo that was used for comparison
- You must also describe:
  - the methods of randomisation
  - allocation concealment
  - blinding of the research staff and the participants

Methods (Interventions)

- You must also describe any procedures that you used to maximise or measure compliance with the interventions
- If a drug is being tested:
  - the generic name
  - the manufacturer
  - the doses used
  - any other information

CONSORT Statement

- CONSORT stands for Consolidated Standards of Reporting Trials.
- It is developed by the CONSORT Group to alleviate the problems arising from inadequate reporting of randomized controlled trials (RCTs).
- The website: http://www.consort-statement.org


Enrollment
Assessed for eligibility (n = ...)
Excluded (n = ...)
Not meeting inclusion criteria (n = ...)
Refused to participate (n = ...)
Other reasons (n = ...)
Randomised (n = ...)
Allocation
Allocated to intervention (n = ...)
Received allocated intervention (n = ...)
Did not receive allocated intervention (give reasons) (n = ...)
Allocated to intervention (n = ...)
Received allocated intervention (n = ...)
Did not receive allocated intervention (give reasons) (n = ...)
Follow up
Lost to follow up (n = ...) (give reasons)
Discontinued intervention (n = ...) (give reasons)
Lost to follow up (n = ...) (give reasons)
Discontinued intervention (n = ...) (give reasons)
Analysis
Analysed (n = ...)
Excluded from analysis (give reasons) (n = ...)
Analysed (n = ...)
Excluded from analysis (give reasons) (n = ...)

Clinical Trial Registry

- Clinicaltrials.gov
- IRCT.ir
- …

Methods (Clinical assessments)

- explain in detail the methods that you used to collect clinical information
- well known equipment can be described with a simple brand name and supplier
- rare or newly devised equipment will need to be described in more detail

Methods (Statistical methods)

- describe how you analysed the data with specific details of:
  - the statistical tests
  - the statistical computer packages
- give the critical value of *P* value:
  - $P < 0{\cdot}05$
  - $P < 0{\cdot}01$
  - $P < 0{\cdot}1$

Methods (Statistical methods)

- Results can vary if the outcome or exposure variables are analysed as:
  - continuous
  - non-parametric
  - categorical data
- serious bias can arise if the incorrect statistical test is used
- Use statistical tests proportional to methods you used

Methods (Statistical methods)

- If you used a statistical test that is not simple or well known
  - a reference to the method
  - an explanation of why you used it

- Explain all of the analyses that you used proportional to results section

How to Write a Paper

How to write results

Results

Simple → complex

- Describe the population
- Start with positive findings
- Establish how comparable your groups were
- Use a mixture of text, tables and figures
- Mention units of measurement
- Mention what numbers, brackets, etc. refer to
  - 9±4, 854 (12.3)
- Bring the P values

Active or passive?

The passive voice will likely dominate here, but use the active voice as much as possible

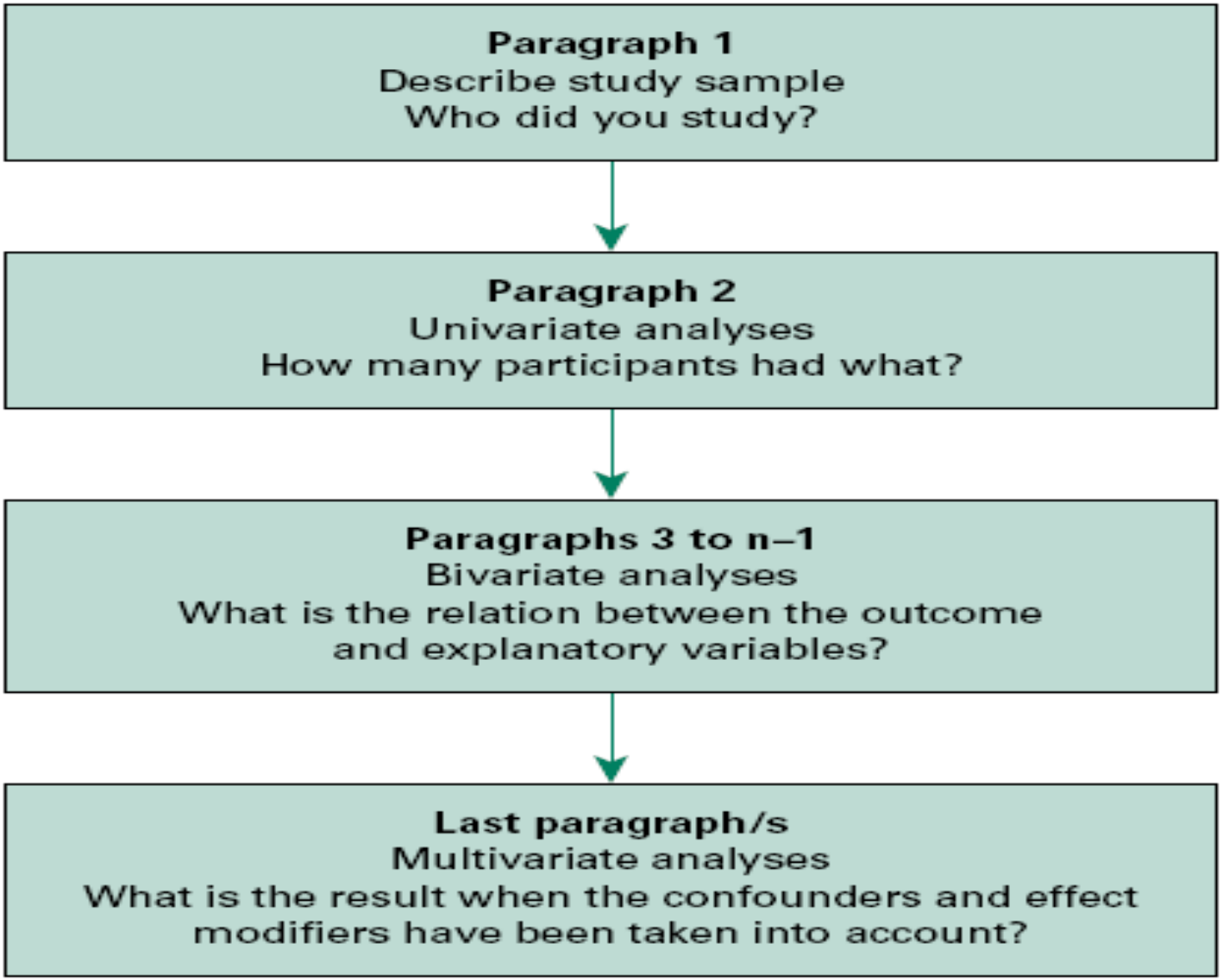


Figure 3.2 Template for the Results.

Table 3.2 Example of topic sentences from the results section of a cross-sectional study.[12]

Notes	Topic sentences
The first paragraphs describe who the participants were.	A total of 1527 participants aged 18 to 73 years from two rural regions participated in this study. Table 1 shows the anthropometric characteristics of the participants ... and Figure 1 illustrates the selection criteria for our normal group. Table 2 shows that the "normal" group of participants were not significantly different from the remainder of the sample in terms of age, height, and weight ($P > 0{\cdot}05$).
The next paragraph describes the bivariate analyses.	The data for the normal group were used to obtain regression equations for FVC, FEV_1 ... with weight, age, gender, and height as the main predictors.
The next paragraphs describe how the bivariate analyses were used.	Using our prediction equations, we calculated mean percentage of predicted FEV_1 values for the whole sample (Figure 2). We then examined the factors that affect lung function.
The final paragraph describes the multivariate analyses.	Multiple regression showed that airway inflammation and asthma were significantly related to reductions in FEV_1 and that the interaction between airway inflammation and recent symptoms was also significant ($P < 0{\cdot}05$).

Note 1:

- Do not repeat the Tables and Figures in text
  - **Summarize**:

    e.g., there were no significant associations…
  - **Describe**:

    e.g. there was a three fold increase in the risk of ..

Note 2:

- Don’t compare your results with results from other studies.
- So where?

Baseline characteristics

- To describe the baseline characteristics of the participants in any type of study, **always use a table and never use a figure**.
  - **comparability** of the study groups
  - unevenly distributed confounders may cause an important bias.
  - **Generalisability** of your results.

Baseline characteristics (cont')

- Never call the baseline characteristics the "demographics" of your study sample.

Oxford Dictionary:

- ***Demography*** is the branch of anthropology in which the statistics of births, deaths, and diseases are studied.

Baseline characteristics (cont')

- Depend on the type of your variables use:
  - number and percentage
  - the mean and its standard deviation
  - the median and its inter-quartile range

No SE,

No 95% CI

Table 3.3 Example of reporting baseline characteristics.

Clinical characteristics of patients randomised to usual care or nurse intervention. Values are numbers (percentages) unless stated otherwise[2]

	Usual care (n = 81)	Nurse intervention (n = 84)
Mean (SD) age (years)	75·6 (7·9)	74·4 (8·6)
Male	44 (51)	54 (64)
Living alone	38 (47)	37 (44)
Social services required	28 (35)	28 (33)
Other medical problems		
angina	40 (49)	38 (45)
past myocardial infarction	41 (51)	46 (55)
diabetes mellitus	15 (19)	15 (18)
chronic lung disease	18 (22)	23 (27)
hypertension	42 (52)	36 (43)
atrial fibrillation	24 (30)	29 (35)
valve disease	12 (15)	15 (18)
past admission for chronic heart failure	36 (44)	27 (32)
New York Heart Association class at admission		
II	16 (20)	19 (23)
III	33 (42)	28 (34)
IV	30 (38)	36 (43)
Degree of left ventricular systolic dysfunction		
mild	10 (13)	18 (22)
moderate	42 (53)	31 (38)
severe	28 (35)	32 (40)
Renal function at admission		
median (interquartile range) plasma urea (mmol/l)	9·7 (6·5–13·9)	8·1 (6·0–10·3)
median (interquartile range) plasma cotinine (μmol/l)	116 (90–168)	108 (84–132)
Mean (SD) blood pressure (mmHg)		
systolic	126·1 (21·4)	116 (19·5)
diastolic	70·1 (12·0)	68·4 (10·2)

Interpretation of results

- Always try to present your results in an **objective** and **dispassionate** way.
- Never overinterpret your findings.
- limit yourself to describing exactly what you found.

Interpretation of results (cont')

- **For example** do not say,

  There was an extremely high incidence of disease in the study population.

This is **emotive** and **subjective** statement.

- Do not labour your results by **repeating** figures or *P* values in the text that you have **already** listed in a table.
- However you will need to **include the *P value*** *in* the **abstract**.

GOLDEN RULES FOR REPORTING NUMBERS

Table 3.4 Golden rules for reporting numbers.

Rule	Correct expression
Numbers less than 10 are words.	In the study group, eight participants underwent the intervention.
Numbers 10 or more are numbers.	There were 120 participants in the study.
Words not numbers begin a sentence.	Twenty per cent of participants had diabetes.
Be consistent in lists of numbers.	In the sample, 15 boys and 4 girls had diabetes.
Numbers less than 1 begin with a zero.	The *P* value was 0·013.
Do not use a space between a number and its per cent sign.	In total, 35% of participants had diabetes.
Use one space between a number and its unit.	The mean height of the group was 170 cm.
Report percentages to only one decimal place if the sample size is larger than 100.	In our sample of 212 children, 10·4% had diabetes.

Table 3.4 Golden rules for reporting numbers.

Rule	Correct expression
Do not use decimal places if the sample size is less than 100.	In our sample of 44 children, 10% had diabetes.
Do not use percentages if the sample size is less than 20.	In our sample of 18 children, two had diabetes.
Do not imply greater precision than your measurement instrument.	Only use one decimal place more than the basic unit of measurement when reporting statistics (means, medians, standard deviations, 95% confidence interval, interquartile ranges, etc.)
For ranges use "to" or a comma but not "–" to avoid confusion with a minus sign and use the same number of decimal places as the summary statistic.	The mean height was 162 cm (95% CI 156 to 168). The mean height was 162 cm (95% CI 156, 168). The median value was 0·5 mm (interquartile range −0·08 to 0·7). The range of heights was 145 to 170 cm.
Rules for data numbers do not apply to citations to the literature.	The page range was 145–70.

Tables

- Consider using a table to present large amounts of data/results.
- Must refer to all tables in text.
- Use the "Stand alone" tables.
- Tables should not be too large.
- Make sure totals add to 100%
- Table legends go above the Table;
- Why?
- Tables are read from top to bottom.

Tables (cont')

- Fancy borders, shading, and multiple grids are both distracting and unnecessary.
- In the majority of journals, scientific tables have few horizontal rules and no vertical rules.

Table 4. Population variation in hatch success (mean percent) of unfertilized eggs for females from populations sampled in1997. N = number of females tested.

<--Table legend

Population	mean (%)	Standard deviation	Range	N
Beaver Creek [T]	7.31	13.95	0-53.16	15
Honey Creek [T]	4.33	7.83	0-25.47	11
Rock Bridge Gans Creek [T]	5.66	13.93	0-77.86	38
Cedar Creek [P]	6.56	9.64	0-46.52	64
Grindstone Creek [P]	8.56	14.77	0-57.32	19
Jacks Fork River [P]	5.28	8.28	0-30.96	28
Meramec River [P]	5.49	10.25	0-45.76	45
Little Dixie Lake [L]	7.96	14.54	0-67.66	71
Little Prairie Lake [L]	6.86	7.84	0-32.40	36
Rocky Forks Lake [L]	3.31	4.12	0-16.14	43
Winegar Lake [L]	10.73	17.58	0-41.64	5
Whetstone Lake [L]	7.36	12.93	0-63.38	57

<--Column titles

<--Table body (data)

[T] = temporary stream, [P] = permanent streams, [L] = lakes. <--footnotes

<--Lines demarcating the different parts of the table

Table 3.5 Example of a scientific table.

Multivariate logistic regression for incident self-reported symptoms of anxiety or depression at year 9. Values are numbers (percentages) unless otherwise stated[24]

	Incident symptoms of anxiety or depression at year 9 (n = 116)	Total (n = 1746)	Adjusted odds ratio (95% CI)	*P* value
Victimised at baseline				
not bullied in year 8	28 (24·1)	680 (38·9)	1·00	
bullied at one time in year 8	42 (36·2)	575 (32·9)	1·49 (0·88 to 2·54)	0·130
bullied at both times in year 8	46 (39·7)	491 (28·1)	2·03 (1·14 to 3·64)	0·019
Availability of attachments at baseline				
available at both times in year 8	96 (82·8)	1501 (86·0)	1·00	
available at one time in year 8	17 (14·1)	217 (12·4)	1·25 (0·53 to 2·96)	0·594
no available attachments in year 8	3 (2·6)	25 (1·4)	1·97 (0·43 to 9·05)	0·366
Arguments with others at baseline				
none at baseline	31 (26·7)	837 (47·9)	1·00	
with one other at either time	67 (57·8)	798 (45·7)	1·86 (1·05 to 3·30)	0·036
with two or more others at either time	18 (15·5)	104 (6·0)	4·25 (1·82 to 9·94)	0·002
Sex				
male	40 (34·5)	868 (49·7)	1·00	
female	76 (65·5)	878 (50·3)	1·86 (1·02 to 3·40)	0·044
Family structure				
intact family	86 (74·1)	1422 (81·4)	1·00	
separated, divorced, other	30 (25·9)	324 (18·6)	1·47 (0·9 to 2·4)	0·116

Example of Table

Three horizontal lines

Table 1. Descriptive characteristics of the study groups, means ± SD or N (%).

Characteristic	Bad Witches	Good Witches
N	13	12
Age (yrs)	45 ± 5	36 ± 6*
Female	11 (85%)	10 (83%)
BMI (kg/m^2)	21 ± 6	23 ± 3
Systolic BP (mmHg)	140 ± 10	120 ± 9*
Exercise (min/day)	30 ± 20	60 ± 30*
Employment status		
Unemployed	4 (31%)	0 (0%)
Part time	3 (23%)	4 (33%)
Full time	6 (46%)	8 (66%)
Smoker (yes/no)	6 (50%)	0 (0%)*

*p<.05, ttest or Fisher's exact test, as appropriate.

Figures and graphics

- Figures are used when we want to distinguish a result & make it prominent into readers view

- Use figures to graphically represent *significant* results.
- Figure legends go below the figure;
- Why?
- figures are usually viewed from bottom to top

Figures and graphics

- The figure should be totally self-explanatory and stand-alone
- the detail has to be balanced against simplicity.
- **Remember….**
- you are not with your figure to present it.
- However,
- figures with too much detail become complicated and difficult to understand.

Figures

- Avoid clutter(too many numbers &symbols)
- Should provide a clear statistical message
- Vertical ("Y") axis: outcome/dependent variable
- Horizontal ("X") axis: exposure/independent variable
- Name & define each axis
- Give the measurement unit of each axis

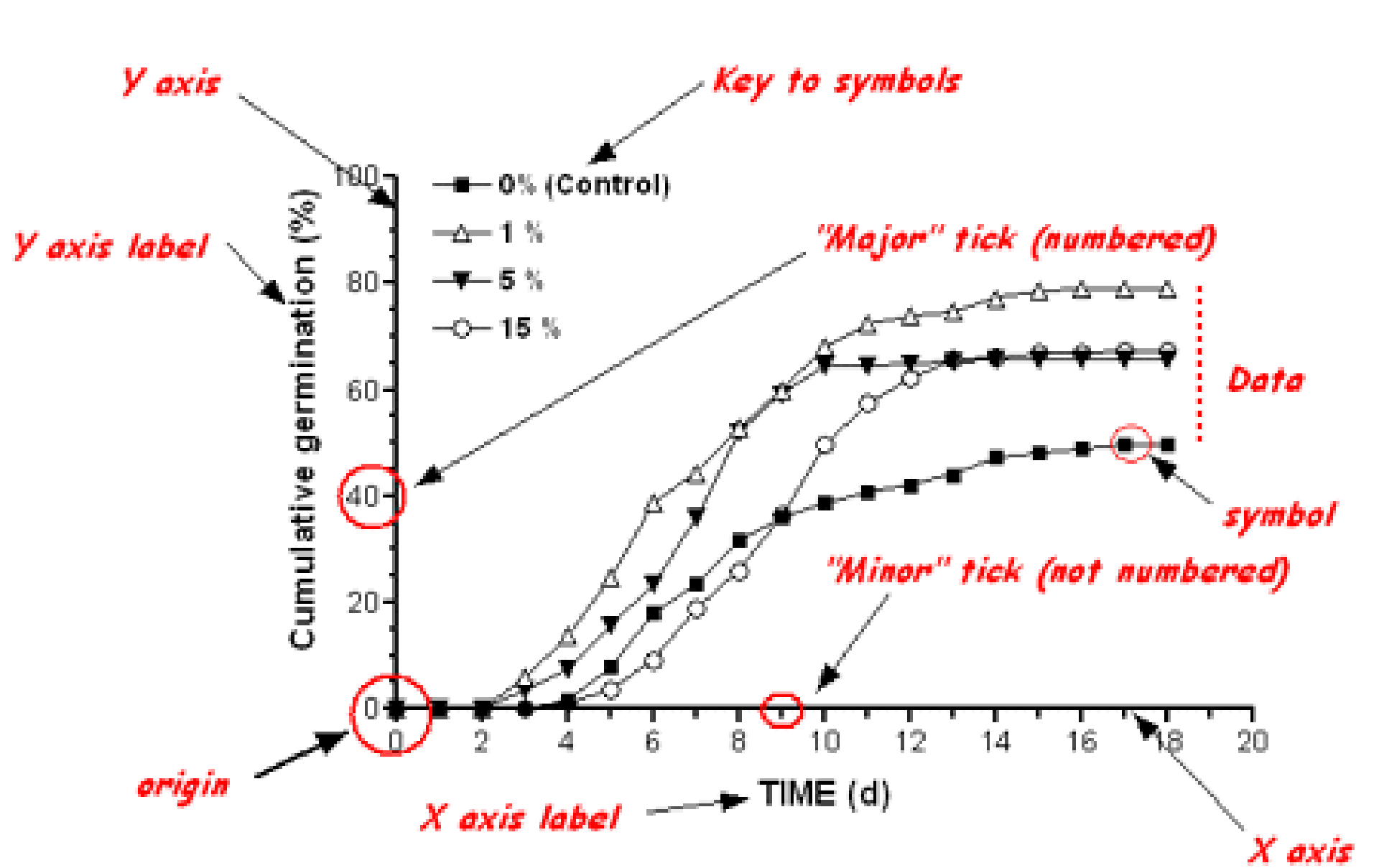


Figure 1. Cumulative gemination of *Chenopodium* seeds after pregemination treatment of 2 day soak in NaCl solutions. n = 1 trial per treatment group (100 seeds/trial.)

legend

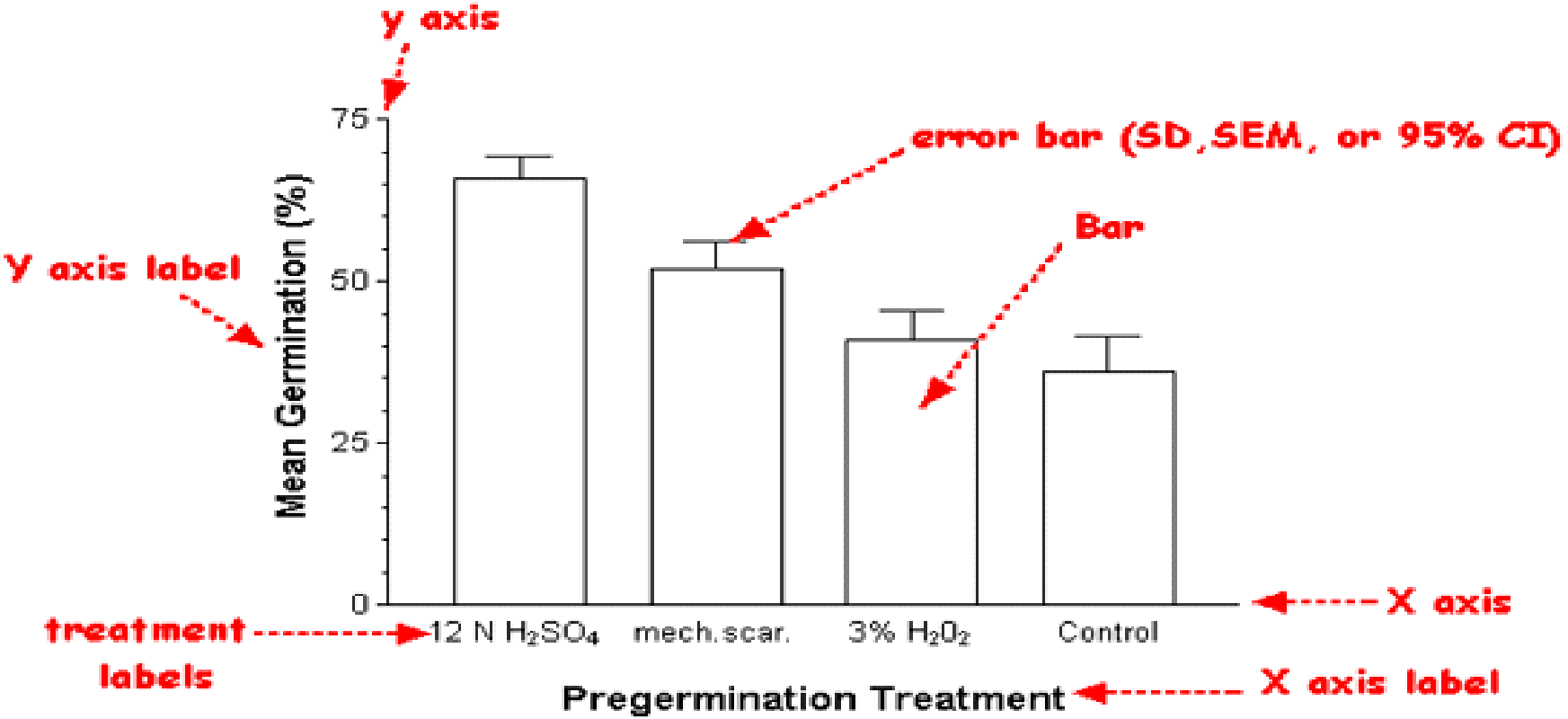


Figure 1. Mean germination (%) of gourd seeds following various pregermination treatments. N=10 groups of 100 seeds per treatment and control. Treatments: 12 hour soak in 12 N H_2SO_4, 90 second scarification of seed coat with 80 grit sandpaper, 6 hour soak in 3% H_2O_2.

figure legend

Figure: *Before*

Figure 1. Effect of total alkaloid fraction of methanolic extract on mean survival time

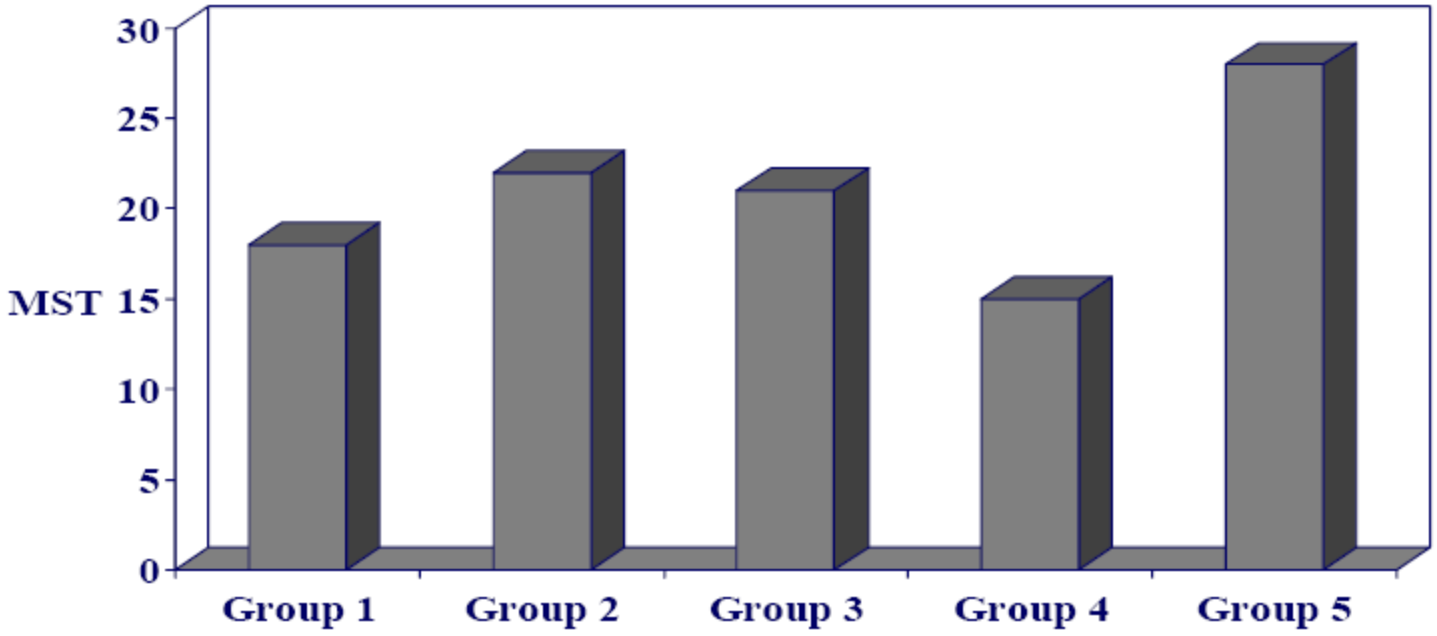


Figure: *After*

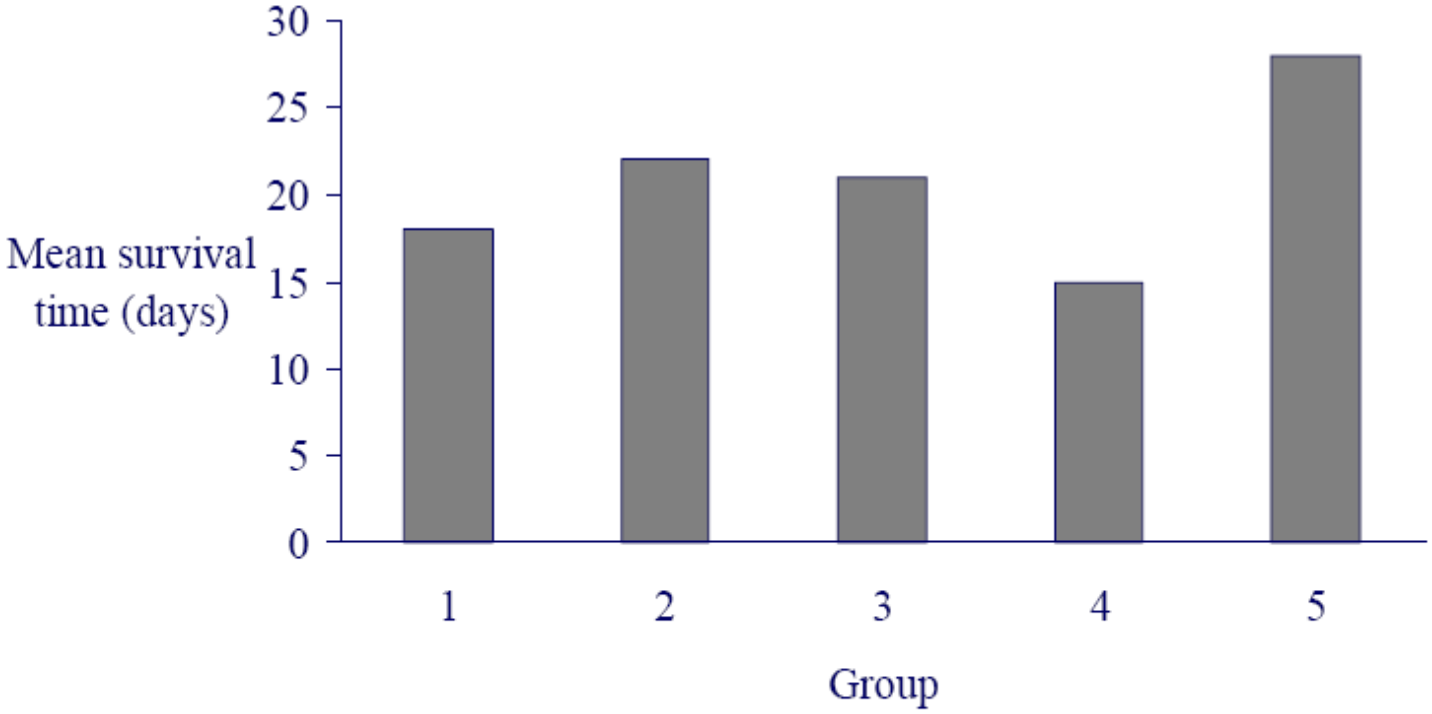


Figure 1. Effect of total alkaloid fraction of methanolic extract of unripe fruit of Solanum pseudocapsicum on mean survival time (MST) in tumor bearing mice.

Figures and graphics (cont')

- Consider their publication in black and white.
- Figures should be simple to interpret, uncluttered, and free of extra lines, text, dimensions, and other tricks.
- third dimension has no meaning when presenting scientific results

Tables and Figures

- Tables and Figures are assigned numbers separately and in the sequence that you will refer to them from the text.
  - The first Table you refer to is Table 1, the next Table 2 and so forth.
  - Similarly, the first Figure is Figure 1, the next Figure 2, etc.
- When referring to a table *from the text*, "Figure" is abbreviated as Fig.,e.g., Fig. 1.
- Table is never abbreviated, e.g., Table 1.

Results:

- Common mistakes
  - Raw data
  - Redundancy
  - Discussion and interpretation of data
  - No figures or tables
  - Methods/materials reported

Recommend

- Look at recent issue of journal
- Use a similar published figure as a template

- Read journal instructions
- Read Vancouver style (*www.icmje.org*)

How to Write a paper

Introduction Section

Template for the Introduction.

Paragraph 1:

What we know

Paragraph 2:

What we don't know

Paragraph 3:

Why we did this study

What is Known & What is Unknown

Introduction

- General, concise description of problem
  - background to the work
  - previous research
- Where that work is deficient
  - how your research will be better
- State the hypothesis
- About 3 to 4 paragraphs

Introduction

1. Existing state of knowledge
2. Gaps in knowledge which research will fill.
3. Give relevant references
4. Summarize the rationale for study or observation
5. Define specialized terms or abbreviations you want to use
6. State what you Intend to do & the purpose of article

Inverted pyramid

Oxidative stress plays an important role in....

When LDL particles are oxidized ...

Antioxidants are important...

...Paraoxonase...

Use tenses correctly in the Introduction

- **What is known**

  in present simple tense

  Malaria **is** still the number one killer of all the infectious diseases. Most deaths…..

- **Past studies and their results**

  in past tense

  Schmidt et al. (1993) **showed ….**

Use tenses correctly in the Introduction (cont')

- **The research aim or purpose**

  in past tense

  - The purpose of this study **was** to answer the following question.

- **The research question**

  in present tense

  - What retrospective meteorological factors **correlate….**

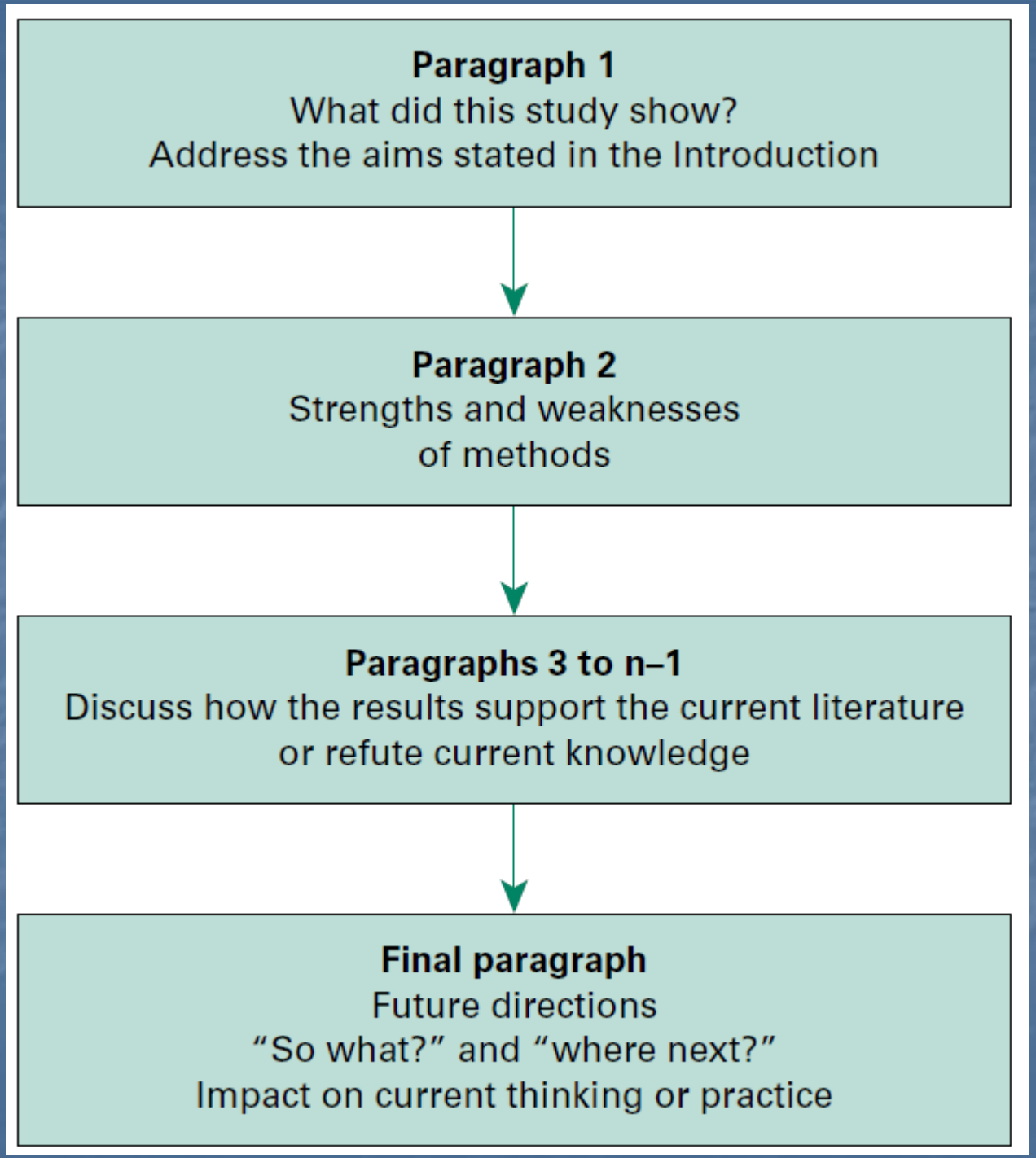
Questions

How to Write a Paper

Discussion

Discussion

- By now you have answered three questions:
  - “Why did we do it?” (Introduction)
  - “What did we do?” (Methods)
  - “What did we find?” (Results)
- It is now time to put all of this into context by dealing with a fourth question:
  - “So what?”


Paragraph 1
What did this study show?
Address the aims stated in the Introduction
Paragraph 2
Strengths and weaknesses
of methods
Paragraphs 3 to n–1
Discuss how the results support the current literature
or refute current knowledge
Final paragraph
Future directions
“So what?” and “where next?”
Impact on current thinking or practice

Discussion

Paragraph 1
What did this study show?
Address the aims stated in the Introduction

- brief summary of what you really found and why it was important
- You can restate the aim in more general terms
- but do not be tempted to restate the results exactly as in the results section

Discussion

Paragraph 1
What did this study show?
Address the aims stated in the Introduction

- Good phrases to begin with are:
  - *The results from this study showed that …*
  - *Our results indicate that …*
  - *The purpose of this study was to …*
  - *We found that …*
- should focus on the **BIG PICTURE** of what your results are really all about

Discussion

Paragraph 1
What did this study show?
Address the aims stated in the Introduction

- Be bold
- Explain precisely what you have found
- Explain how it will add to current knowledge or change health care.

Discussion

Paragraph 2
Strengths and weaknesses
of methods

- Honesty is the best policy here
- you do not need to be unnecessarily negative about what you have done
- However, be honest about how chance, bias, or confounding may have influenced your results
  - how you minimised this possibility
  - how your research is better than others'

Discussion

Paragraph 2
Strengths and weaknesses
of methods

- Although many readers like to find this information in the second paragraph
- It can also be placed later in the section.

Discussion

Paragraphs 3 to n–1
Discuss how the results support the current literature or refute current knowledge

- explain how your results agree or disagree with other studies and with other related theories
- Do not be tempted to discuss all the journal articles in every remotely related field

Discussion

Paragraphs 3 to n–1
Discuss how the results support the current literature or refute current knowledge

- confine yourself to discussing the work in your field that is highly relevant and reputable
- If you have reached a different conclusion from other researchers
  - try to explain why you think this has happened

Discussion

Paragraphs 3 to n–1
Discuss how the results support the current literature or refute current knowledge

- Your references to the literature need to be both focused and brief

Discussion

Final paragraph
Future directions
"So what?" and "where next?"
Impact on current thinking or practice

- an exciting summary of the implications of your findings
- The "so what?" of your research needs to be very clear here
- This is a time when you can extend your thinking a little without overstating the implications

Discussion

Final paragraph
Future directions
"So what?" and "where next?"
Impact on current thinking or practice

- it is **IMPORTANT** that:
  - you never generalise your results beyond the bounds of the type of participants included in your study
  - never draw unjustified conclusions

PLEASE

Discussion

Final paragraph
Future directions
"So what?" and "where next?"
Impact on current thinking or practice

- On the other hand
  - Do not be too tentative if you found a strong association between the exposure and outcomes that you were investigating
    - **BE FAIR**

Discussion

Final paragraph
Future directions
"So what?" and "where next?"
Impact on current thinking or practice

- Never finish a discussion with
  - *Further studies are needed …*
  - *We are now investigating whether* ….
- This is not only boring but it is presumptuous to tell your readers what research you consider that they should do, or what you are thinking of doing next

Discussion

Final paragraph
Future directions
"So what?" and "where next?"
Impact on current thinking or practice

- By writing a clear "so what?", you create a much more interesting and informative end to a paper
- Some journal editors suggest that discussion sections should not be finished with statements that recommend specific public health actions

Ethics of publication

Plagiarism

What is Plagiarism?

- **Oxford English Dictionary defines plagiarism as:**

The action or practice of taking someone else's work, idea, etc., and passing it off as one's own; literary theft.

- **American Heritage Dictionary of the English Language**

- *The copying from a book, article, notebook, video, or other source material, whether published or unpublished, without proper credit through the use of quotation marks, footnotes, and other customary means of identifying sources, or passing off as one's own the ideas, words, writings, programs, and experiments of another, whether or not such actions are intentional or unintentional."*

راهنمای کشوری اخلاق در انتشار آثار پژوهشی علوم پزشکی
فصل هفتم: سرقت معنوی

- **ماده‌ی ۷-۱)** سرقت معنوی عبارت است از استفاده از تمامی یا قسمتی از مطالب یا ایده‌های منتشر شده یا منتشر نشده‌ی فرد یا افراد دیگر بدون ذکر منبع به روش مناسب یا کسب اجازه در موارد ضروری.

ماده‌ی ۷-۲) استفاده از اصل یا ترجمه‌ی متن منتشر شده‌ی دیگران در دست نوشته باید بر طبق ضوابط ذیل انجام گیرد:

الف) در صورت استفاده از شکل، جدول، پرسشنامه و یا بخش قابل توجهی از متن مورد نظر یا ترجمه‌ی آن، به صورت آوردن عین آن متن، باید علاوه بر آوردن متن در داخل گیومه و ذکر منبع، از مالک معنوی متن اولیه اجازه‌ی کتبی اخذ گردد.

ب) در صورت استفاده از بخشی جزئی از متن مورد نظر یا ترجمه‌ی آن، به صورت آوردن عین آن متن، باید متن مورد نظر در داخل گیومه آورده شود و منبع آن ذکر گردد.

ج) در صورت استفاده از متن مورد نظر یا ترجمه آن به صورت نقل به مضمون، جمع‌بندی،نتیجه‌گیری یا برداشت ایده، باید منبع آن ذکر گردد.

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فصل هفتم: سرقت معنوی (ادامه)

- تبصره‌ی ۱) اگر بخشی از متن که مورد استفاده قرار می‌گیرد، به صورت جزئی، مثلاً در حد تغییر چند کلمه یا آوردن معادل آنها یا تغییر زمان افعال، تغییر کند، باز هم شامل موارد مربوط به آوردن عین متن (بند الف یا ب) می‌گردد.

تبصره‌ی ۲) مندرجات این ماده در مورد مطالب منتشر شده‌ی قبلی خود نویسنده(گان) دستنوشته نیز صادق است.

ماده ۷-۳) در مورد بند ج، نقل به مضمون نباید به گونه‌ای باشد که با منظور نویسنده(گان) اصلی و روح کلی نوشته‌ی آن‌ها منافات داشته باشد.

ماده‌ی ۷-۴) هرگونه مدعایی که در دست‌نوشته نقل یا بیان می‌گردد یا هرگونه روش مورد استفاده در دستیابی به نتایج، اگر جزو معرفت عمومی و واضح برای مخاطب نباشد، باید با ذکر مرجع باشد.

Ethics of publication

Plagiarism

- Plagiarism is the use of another individual's published work or unpublished ideas without attribution
- Scientific papers and grant proposals have been used as targets
- Plagiarism may be used in some instances as a device to cover up language difficulties

Plagiarism (cont')

Original work demands original thought. You should try and separate your ideas from those of others.

Once a piece of work is complete, look at each part and ask yourself if the ideas expressed are entirely your own, and whether the general language or choice of words is your own.

If the answer to either is "no" the work should be credited to the original author.

Different Types of Plagiarism

- **Direct (Copy & Paste) : The use of another's exact words without citing the author**
- **Mosaic:**
- **Paraphrase (Word Switch):** Paraphrasing is when you take the ideas or phrases from a source and rewrite them using your own words. The art of restating in your own words the words of another
- **Ideas:** Presenting another's ideas as your own without giving the person credit and Submitting without citing
- **Self Plagiarism:** The use of previous work for a separate assignment

Self-plagiarism

- **Recycling your own writing or data, from one published paper to the next**

Including:

- **Copying or only slightly rewriting text from your own previously published papers.**
- **You cannot plagiarize from your own work.**
- Remember: text is now copyrighted and owned by the journal/publisher that published your text.

Plagiarism Detection Softwares

- There are lots of Plagiarism Detection Softwares which you can find on the web. Here are some of them:
- Turnitin.com
- http://www.duplichecker.com/
- http://www.anticutandpaste.com
- http://www.plagiarismdetect.com
- http://www.dustball.com/cs/plagiarism.checker/
- http://www.plagiarismfinder.com/en-index.htm
- http://www.ithenticate.com/
- www.writecheck.com/
- http://www.safeassign.com/
- Et-blast for checking title, abstract and keywords
- Eve2 and viper softwares,
- http://www.millikin.edu/wcenter/plagiarism3.html

راهکاری پیشگیری از سرقت ادبی

- آموزش و یادگیری
- قانون گذاری
- برخورد

Ethics of publication

Conflicts of interest

Or

Competing Interests

- تعارض منافع عبارت است از وجود هرگونه منفعت مالي و غير مالي كه احتمال دارد نويسنده ، داور يا سردبير را در اظهار صادقانه‌ي نظر خود تحت تأثير قرار دهد

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فصل چهارم: تعارض منافع

- **ماده‌ی ۴-۱)** تعارض منافع عبارت است از وجود هرگونه منفعت مالی و غیر مالی که احتمال دارد نویسنده ، داور یا سردبیر را در اظهار صادقانه‌ی نظر خود تحت تأثیر قرار دهد. وجود تعارض منافع به خودی خود ایرادی اخلاقی برای یک دست نوشته محسوب نمی‌شود.

ماده‌ی ۴-۲) نویسنده(گان) یک دست نوشته باید هرگونه تعارض منافع خود را که از نگاه مخاطبین پوشیده‌است ، در متن یا ذیل دست نوشته به‌طور شفاف اعلام نمایند.

تبصره: قرارداد میان پژوهشگر(ان) و حامی مالی پژوهش نباید متضمن منع اعلام هر گونه تعارض منافع در دست نوشته حاصله باشد.

ماده‌ی ۴-۳) نویسنده(گان) باید منابع تأمین هزینه‌های پژوهش و نگارش مقاله را به‌طور شفاف معرفی نمایند.

ماده‌ی ۴-۴) اعضای هیأت تحریریه یا شورای سردبیری چنان‌چه در تصمیم‌گیری سردبیر در مورد یک دست نوشته تأثیرگذار باشند، باید به‌طور شفاف و کامل سردبیر را درباره‌ی هر گونه تعارض منافع در امر مورد نظر مطلع نمایند.

Ethics of publication

Conflict of interest

- authors, reviewers, editors, and indeed the journal owners or publishers

- The existence of competing interests is not a crime as long as they are **disclosed**

Ethics of publication

Redundant publication

(Duplicate or Triplicate publication)

Ethics of publication

Redundant publication

(Duplicate or Triplicate publication)

- two or more papers that overlap in a major way are published in different journals without cross-reference
- Why is it forbidden?
  - Logically: It is enough saying one concept just one time
  - Ethically: Resource wasting
  - Methodologically: Making BIAS in the literature

راهنمای کشوری اخلاق در انتشار آثار پژوهشی علوم پزشکی
فصل ششم: انتشارات همپوشان

- **ماده‌ی ۶-۱)** اگر یک نشریه‌ی چاپی یا الکترونیک دست نوشته‌ای را پیش از این منتشر کرده باشد یا در حال بررسی برای انتشار آن باشد، ارسال همان دست نوشته به نشریه‌ی دیگر یا انتشار مجدد آن نادرست است.

تبصره‌ی ۱: اگر نویسنده(گان) دستنوشته‌ای که در یک نشریه در دست بررسی برای انتشار است، تصمیم بگیرند، به هر دلیلی، آن دست نوشته را برای نشریه‌ی دیگری ارسال نمایند، باید ابتدا انصراف خود را از انتشار دست نوشته به صورت کتبی به نشریه‌ی اول اعلام نمایند. این کار حداکثر تا پیش از اعلام پذیرش دست نوشته برای انتشار در نشریه‌ی اول، امکان‌پذیر است.

تبصره‌ی ۲: اگر سردبیران چند نشریه تصمیم بگیرند که به‌طور هم‌زمان یا مشترک دست نوشته‌ای را منتشر کنند، در صورتی‌که هدف از این اقدام تأمین سلامت جامعه باشد و نیز مراتب به‌طور شفاف به خوانندگان آن نشریات اطلاع‌رسانی شود، مشروط به رعایت کلیه‌ی حقوق مادی و معنوی مرتبط، این کار بلامانع است.

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فصل ششم: انتشارات همپوشان

ماده‌ی ۶-۲) ارسال دست نوشته‌ای که حاوی حجم قابل توجهی از یک مقاله‌ی منتشر شده یا در حال بررسی باشد، برای بررسی جهت انتشار به عنوان مقاله‌ی علمی - پژوهشی نادرست است، حتی اگر به مقاله‌ی قبلی ارجاع داده باشد و یا مقاله‌ی قبلی به نویسنده(گان) همین دست نوشته تعلق داشته باشد.

تبصره: تکرار بخش « مواد و روش‌ها » در مقالات بعدی همان نویسنده(گان)، در صورت ضرورت، بلامانع است اما در هر حال ذکر مرجع لازم می‌باشد.

ماده‌ی ۶-۳) اگر مقاله‌ای پیش از این به صورت چاپی یا الکترونیک منتشر شده باشد، ارسال ترجمه‌ی همان مقاله به زبانی دیگر برای بررسی جهت انتشار، در صورت کسب موافقت سردبیران هر دو مجله و اطلاع‌رسانی شفاف به خوانندگان بلامانع است.

four subtypes of duplicate publications (they are kinds of Self-plagiarism):

- **Duplicate (redundant) publication**: It occurs when an author submits identical or almost identical manuscripts to two different journals.

four subtypes of duplicate publications (they are kinds of Self-plagiarism) (cont'):

- **Augmented publication**: It occurs when authors add additional data to already published data and submit the new manuscript with new, recalculated results often with different title and adjusted study aims.
- As it is not a case of verbatim word plagiarism, this type of plagiarism is difficult to detect.

four subtypes of duplicate publications (they are kinds of Self-plagiarism) (cont'):

Segmented (salami) publication:

It occurs when two or more papers are derived from the same experiment.

This form of plagiarism is also difficult to detect.

four subtypes of duplicate publications (they are kinds of Self-plagiarism) (cont'):

- **Text recycling**: Using large portion of one's own already published work in new manuscript
- this type of plagiarism is easily detectable by plagiarism detection tools and software.

Ethics of publication

- Publication of an abstract as part of the proceedings of a scientific meeting does not constitute redundant publication
  - but full **disclosure** should be made when the full paper is submitted
- Previous publication of a paper in another language is also acceptable
  - as long as it is **disclosed**
- two or more papers involving the same or similar patient database to be published in sequence
  - Authors should **disclose** this to the editor and make cross-reference to previous papers

انواع دیگر سوء رفتار در انتشار

- جعل (Fabrication) : ساخت داده و نتایج و ثبت و گزارش آنها

- تحریف (Falsification): دستکاری روش کار، ابزار و یا تغییر و حذف داده ها و نتایج

Ethics of publication

- What is publication ethics?

- The Committee on Publication Ethics (**COPE**) published guidelines on *Good Publication Practice* in 1999

and continues to update these on a regular Basis

http://www.publicationethics.org.uk