Study Guide 18: How to Write Up and Get Your Work Published

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Contents

(1) Overview and learning outcomes

This study guide is aimed at those preparing the formal report on their research study (e.g. thesis, project report) and also those who are considering submitting the work for publication. Both novice and experienced researchers should benefit from reading this guide after which they should be able to:

- State why it is important to publish?
- Cite the different types of published reports
- Know how to choose a journal
- Understand common problems in writing

- Be aware of strategies to overcome the problems
- Prepare the manuscript
- Be familiar with the editorial process
- Be aware of what referees and editors are looking for
- Consider what to do if the manuscript is rejected
- Consider what to do if the manuscript is accepted

Associated NHS Fife study guides:
16 How to achieve success with your dissertation
17 How to write an abstract

(2) Why is it important to publish?

The need to disseminate and publish findings is an integral part of any study. Most authorities consider it is irresponsible not to publish study findings particularly when the study has been successful and has been funded from the public purse or charity funds. In any case, funded studies will need to produce a final report for the funder and sponsor as well as for any ethics committee that gave a favourable opinion to the study. It can be but a short step from writing such a final report to producing a manuscript ready for submitting to a journal.

Published papers can report new findings (e.g. a treatment, screening test, disease, hypothesis, literature review), confirm or refute the work of others or challenge current practices. They represent an opportunity to inform and influence practice for the better, as well as contribute to your CV and career development. Finally, publishing your study demonstrates to a potential future employer that you have a reputation for tenacity in completing a piece of work!

(3) Types of published reports

There are a number of different formats available for publishing work:

(a) Case reports
(b) Student text
(c) Abstract in a conference proceedings
(d) Original scientific study
  - Full paper (2000-4000 words)
  - Short report (800-1000 words)
(e) Editorial
(f) Review (subject or book)
(g) Letters to the editor
(h) Professional newsletters

Case reports presenting novel and interesting findings represent an opportunity for health care professionals, of whatever discipline and in whatever stage of their career, to contribute to the general medical literature. Many journals will take case reports and some journals are devoted only to them (e.g. The Journal of Medical Cases www.journalmc.org and the BMJ http://casereports.bmj.com).

Some journals will publish *student texts* that report early clinical experience or arise from small pieces of work undertaken during training. These represent a convenient means for students to begin their publishing career.

Perhaps the simplest way of beginning your publication record is to present your work as a poster or oral presentation at a conference where the conference proceedings, including the *abstracts* are published in a leading journal. The initial presentation of a study at a conference is part of the 'digestive process' in the evolution of a published paper as it provides an opportunity for others to raise important issues on the data and conclusions that the authors may not have considered. The published abstract can be cited in the full paper and in the accompanying letter to the editor when submitting the paper for publication as it demonstrates the work has already been subjected to scientific scrutiny in being accepted by the conference organisers. However, publication of an abstract does not, in itself, constitute completion of the job! Some authorities consider published abstracts on your CV represent evidence of only limited intellectual activity and it is your record of publishing peer-reviewed papers that will count most in job interviews, particularly for academic posts.

Original scientific studies can be written up as a *full paper* or as a *short report* which some, but not all journals will take. On occasion an editor may invite authors who have submitted a full paper to resubmit the work as a short report. The authors then have to decide to take up the invitation, having overcome one hurdle by getting a 'foot in the door', or to submit the full paper to another journal. The decision may rest on (1) their attitude concerning the prestige of having their work published as a short report, and (2) the extra work in précising a 3000-4000 word article down to 800-1000 words. A short report may sound attractive but the extra work involved can be considerable and should not be underestimated. Short reports are usually limited to one table and no more than 5 references so, if you are considering writing one check the journal's instructions to authors to determine if the task is feasible.

Editorials are usually by invitation from the editor. Often one of the paper's referees will be invited to write an editorial for the same issue in which the paper is being published. Some journals will offer a gratuity for an accompanying editorial.

Similarly, a *subject or book review* will be by invitation and is likely to also attract a payment as the work is onerous and should not be underestimated.

Letters to the editor may be published and offer an opportunity for authors to comment on the work of others as well as reporting their own findings but in relation to a related paper published by the journal.

Finally, comments on important professional topics can be published in *professional newsletters* where the writing style may be less formal. The circulation may be limited but the newsletter is likely to be read widely by your colleagues offering the opportunity to get your message across to the very audience you hope to reach.

(4) Choosing a journal

The choice of a journal is critical. Considerations include the audience you want to reach, the size, circulation, prestige, speed of publishing and potential cost in that some journals levy charges for publishing colour images and for allowing open access to your paper. Some journals, known as *'predatory journals',* will accept articles for a fee but have poor, or no peer-review processes. These journals are best avoided.

Another consideration is the 'quality' of the journal as measured by some metric reflecting a journal's relative importance in the medical literature. Various metrics exist of which the Impact Factor (IF), the SCImago Journal Rank (SJR indicator), the H-index and Q-index are just four examples.

(4.1) Impact Factor (IF)

A journal's Impact Factor is calculated from the number of citations each of its published papers receives in a given period (2 or 5 years) divided by the number of papers published in that period. Papers that make a significant contribution to a field of study are more likely to be cited by other authors in their own published reports. A large number of citations to a journal's content will reflect a greater importance in the medical literature, hence a higher impact (and factor) in that field.

Example: calculation of a journal's 2-year impact factor

Impact factor = Number of citations in 2014 to articles published in the journal in 2012 and 2013, divided by the total number of articles published in 2012 and 2013.
Citations in 2014 to articles published in 2012 = **509**, 2013 = **256 (Total = 765)**
Number of articles published in 2012 = **96**, 2013 = **144 (Total = 240)**
Impact factor = 765 / 240 = 3.188

(4.2) The SCImago Journal Rank (SJR Indicator)

The SJR indicator is derived from data contained in the Scopus® database of about 20,000 journals. The value of the indicator is weighted in favour of citations from more important, highly cited journals and covers a 3-year period providing an indicator that should be more stable over time. https://www.scimagojr.com/index.php

(4.3) A Journal's H-index

This index reflects a journal's contribution, and importance within a given field. It is a complex concept derived from the number of articles published by a journal and the number of times each of those articles is cited in other publications. The H-index can also be calculated for individual authors, research groups and institutions. Web of Science, Scopus® and Google Scholar provide source data. As an example, if an individual author had 5 publications cited 10, 8, 6, 2 and 2 times, then their H-index would be 3 as 3 of their publications had at least 3 citations.

(4.4) The Q-index

The Q-index is a journal's ranking in that journal's subject category, expressed as a quartile (Q1 to Q4). Hence, a journal in Q1 would be in the top 25% of all journals in that subject grouping.
https://www.scimagojr.com/journalrank.php?category=2712&page=1&total_size=232

The various metrics are given for some selected journals in Table 1 to show how the different indicators relate to one another. The rejection rates are high (often >95%) for the most prestigious journals so the choice of journal must include a balance between the likelihood of gaining acceptance and the importance and uniqueness of the study findings.

Table 1. Journal quality indicators of some selected journals (2020), listed in order of their Impact Factor

Journal	Impact Factor	SJR	H-Index	Q-index
New England Journal of Medicine	74.699	19.889	1030	Q1
Lancet	60.392	13.103	762	Q1
BMJ	30.223	1.831	429	Q1
Gut	19.819	8.413	293	Q1
Thorax	10.844	3.083	221	Q1
Rheumatology	5.606	1.957	173	Q1
Heart	5.213	2.184	183	Q1
Journal of Public Health	1.806	0.916	82	Q1
International Journal of Dermatology	1.794	0.677	93	Q2
British Journal of Visual Impairment	1.240	0.373	21	Q3

(5) Tips before you start writing

The advice provided here assumes you are writing up a full, scientific paper with co-authors. If you are a single author the advice will still be useful but if you are preparing anything other than a scientific paper some sections will be irrelevant.

Whatever your intentions it is important to be well organised and adopt a workable plan to preparing the manuscript. At the planning stage of the project you should have agreed the authorship of any published work arising from it. Now, having completed the study and its analysis you should agree the split with your co-authors. Decide who is to write which section and by which date they should have the first draft completed? The drafts will need to be revised by the co-authors and subsequent drafts distributed for further refinement. Agree the timetable for completing, revising and returning drafts and ensure everyone sticks to it. It helps to appoint someone to coordinate the write-up.

If possible, agree a writing style beforehand to avoid acrimony. This can be tricky as writing styles may differ markedly between authors. It may be best to agree amongst the authors that the lead author, or coordinator, is permitted to adjust individual contributions to align the writing styles.

Decide the key messages by writing a few sentences on ‘what do we know about this subject’ and ‘what does this study add’. These sentences will help the authors focus on their individual contribution.

Decide who will be the target audience as this may influence the writing style and content. Be aware that the work will be read by an international audience so the writing style will need to cater for any limited expertise in reading English.

Read a few back issues of the chosen Journal to determine the house style and, most important of all at this stage, read the instructions to authors and prepare the

manuscript accordingly! A paper that is not structured as advised will be rejected by an editor at the first hurdle leading to frustration for all concerned.

(5.1) Choice and order of authors

Choosing the authors and their order of citation can be problematic. All authors should be prepared to defend the paper in a public arena. You should avoid 'guest authors' who are individuals invited to join a team, without having done any of the work, merely to increase the kudos of the reported study. The main criterion for authorship is having made a substantial contribution to the conception, literature review, study design, analysis and interpretation of data or drafting of the manuscript. Acquisition of funding, or collection of data are not considered criteria by many authorities. But, for the latter, this should be challenged in certain circumstances. For example, data may be collected by an admin assistant simply inputting data onto a spreadsheet from the medical records or a questionnaire. Alternatively, data may be collected and inputted into a spreadsheet by a research nurse, or research midwife, using their clinical judgement to interpret and comment on the relevance of the data items. The first example would not qualify for authorship but the second example would have a stronger claim to be included in the list of authors particularly if the research nurse or midwife had been involved in other aspects of the study.

A convenient approach to determining the order is to prepare a table listing in rows the various aspects of the study with columns headed by each author listed alphabetically. Then ask each author to tick those aspects they were involved in and review the relative contributions of each but taking into account the importance of each component (Table 2). However, nowadays the most important positions are the first and last listed (the latter usually being the most senior author).

Table 2. An example of a check list to help decide the order of authors on a paper *(personal communication from Prof Martin White)*

Authors:	JB	DE	NE	JF	MK
Conception of idea				✓	✓
Study design		✓			✓
Grant application				✓	
Ethics application				✓	
Data collection	✓				
Literature review		✓		✓	✓
Data entry/coding	✓		✓		
Data validation		✓	✓		
Data analysis		✓			
Preparation of charts / figs		✓			
Statistical advice		✓			
Writing / drafting text		✓		✓	✓
Commenting on drafts		✓	✓	✓	✓
Proof reading / formatting		✓			
Proposed order:	To be agreed by all co-authors				

(6) Tips once you start writing

You do not have to start with a blank sheet. Refer back to the grant application (if relevant), to the protocol and to any ethics application as these will have details relevant for the introduction and methods sections of the paper. The literature review

should have been completed by this stage and it may be that you have already been composing text as you progressed through the study.

One initial approach recommended by some authorities is to compose the result section's tables, graphs and figures so that all the co-authors are aware of how the study findings are to be presented before they begin preparing their own section.

Write in good English with a style that makes it readable. Write with the international audience in mind as your work may be read by individuals who are not native English speakers. Tips for good writing include:

1. Write short, concise sentences (less than 20 words).
2. Use active not passive tense. *For example, 'nurses treat patients' (active tense) rather than 'patients are treated by nurses' (passive tense).*
3. Use positive rather than negative statements. *For example, '90% of students passed' rather than 10% of students failed'.*
4. Use simple words. *For example, 'this table shows...' rather than 'this table demonstrates...'*
5. Avoid needless punctuation.
6. Avoid split infinitives. *For example, 'we used a meter to record accurately.....'* rather than *'we used a meter to accurately record.....'* However, there are times when the split infinitive is preferable to the grammatically correct presentation to improve readability, for example, 'His work as a specialist advisor served to greatly enhance the reputation of the department'.
7. Do not mix numbers and words, decimals and fractions. *The usual convention is to write the number as a word if ten or less but as the actual number if more than ten.*
8. Avoid technical jargon (where possible).
9. Avoid needless words.
10. Avoid imprecision and irrelevance.
11. Avoid double negatives. *For example, 'hypertension is common' rather than 'hypertension is not uncommon'.*

Source: Adapted from Albert T. A selection of frequently asked questions about writing. *BMJ (Careers)*, 2002; S83

Avoid plagiarism! For example, do not claim credit for another person's findings and do not copy verbatim from other published reports, unless presented in quotation marks and the source acknowledged.

Overall, brevity is an advantage but it is better to write a long sentence with clear meaning than a short sentence which is obscure.

Look carefully for examples which conflict with this advice in the present account!

(6.1) The Word Processing Package

Some people prefer to write with pen and ink whereas others prefer to compose at the computer. If the latter, make sure the co-authors are using the same computer software (Microsoft or Apple) and the same version of the word processing package (e.g. Microsoft WORD©). Programs are available to translate between Microsoft and Apple word processing packages but some features such as equations and special

characters do not copy across faithfully. There can be additional problems associated with pagination.

Word processing packages include a spell and grammar check with auto-correction. These are helpful but can lead to problems as the default option is US spelling (e.g. edema not oedema, hemoglobin not haemoglobin, fetus not foetus, standardization not standardisation etc). These features are convenient particularly if you are preparing a paper for publication in a US journal. However, the spell check can be set to UK English by changing the default from English (US) to English (UK) on the 'Set language' button on the 'Review' tab on the toolbar.

Beware of advice on grammar as the suggested revisions are not always correct. Similarly, when a word is misspelt the auto-correction facility can sometimes create problems with confusion over words, for example:

from	→	form	discreet	→	discrete
trial	→	trail	deprivation	→	depravation
untied	→	united	marital	→	martial
compiled	→	complied	Brain	→	Brian

The spell check may also be unfamiliar with specialist or technical terms, for example, 'comorbidity', 'nulliparous', 'proforma', 'scattergram'. However, these words can be added to the dictionary to prevent them from being highlighted as misspelt.

You may find yourself writing the same word or phrase repeatedly. This can be tiresome for the reader and frustrating for you. Use the thesaurus (synonyms) facility to find substitute words with the same or similar meaning.

Check the advice on the journal's instructions to authors on text spacing (e.g. double-spaced), font and text size, on use of the page break facility and on the placement of the tables and diagrams (in the body of the text or at the end of the paper).

Remember to save your work during each session at regular intervals to avoid loss of progress in case the computer package 'freezes' or the computer 'crashes'.

(6.2) Common problems with writing

Common problems identified when writing include:

1. I find it difficult to start writing.
2. I have too many ideas.
3. I spend too much time thinking.
4. I spend too much time gathering information.
5. I write too much or too little.
6. I don't have enough time to write.
7. I spend too much time rewriting and don't know when to stop.
8. I don't know what good writing is.
9. I get 'writer's block'.

Source: Adapted from Albert T. The problem with writing. *BMJ (Careers)*, 2002; S180

'Writer's block' is common and can occur on getting started, mid-stream or near finishing. The best solution is not to struggle on but to think more about what you want to say and to write less. Write what you can, then shelve it and resurrect it a few days later to continue the composition. A new day usually brings a fresh approach with fresh ideas but try to stick to the timetable set for completing the manuscript.

(6.3) Maintain file backups

It is essential to back up your drafts. After each revision save the file with the following format: *filename(year-month-day)*. For example, DraftPaper(2021-04-27). On revising the file on another day create a new version with that day's date in the title and retain the previous version as a later revision may result in your co-authors deciding to use an earlier draft. Saving files in this format ensures that the various drafts are listed in date order. For example:

DraftPaper (2021-04-27)
DraftPaper (2021-05-03)
DraftPaper (2021-07-04)

In comparison, using a date format such as *270421* is likely to result in files listed out of date order:

DraftPaper (030521)
DraftPaper (040721)
DraftPaper (270421)

Also, by retaining previous versions you can revert to an earlier version if you suffer a catastrophic error in saving a file or if your computer 'crashes'. Finally, create further backups of your drafts onto a data stick or other external media and email them to yourself or another convenient addressee.

(7) Preparing the manuscript

Advice on preparing the manuscript is available from the Equator Network (**E**nhancing the **QUA**lity and **T**ransparency **O**f Health **R**esearch) which contains check lists for writing up the results of different study designs: https://www.equator-network.org/. Guidelines are available for reporting the results of case reports (CARE), qualitative studies (SRQR), quality improvement studies (SQUIRE), randomised controlled trials (CONSORT), observational studies, including cross-sectional, case-control and cohort studies (STROBE), systematic reviews and meta-analyses (PRISMA), epidemiological studies (MOOSE) and many others. Some journals require submission of a table along with the paper to ensure authors have attended to important descriptive aspects of the study design as defined in the reporting guidelines.

The structure of the manuscript when preparing a scientific paper is:

- Title
- Abstract
- Introduction
- Methods
- Results
- Discussion

- Acknowledgements
- Ethics statement
- Conflicts of interest
- Author contributions to the manuscript
- References

However, the text does not need to be written in this order. It is good practice to write up a study as it progresses so the first section completed may be the methods, then the draft introduction, followed later by the results, discussion, a revised introduction, and the abstract.

(7.1) Title

Initially, the authors may compose a working title that can be revised once the paper is nearing completion. The final title should be informative to attract the casual reader and to assist those charged with generating the search criteria by which the paper will be indexed in the various databases (PubMed, MEDLINE etc). The title may be a description of what was studied and the research design (*Maternal obesity and the risk of stillbirth: a population based case control study*) or a statement of the findings (*Maternal obesity is an independent risk factor for stillbirth in nulliparous, Caucasian women*). A shorter *running title* will be required to head pages in the journal.

(7.2) Abstract

A paper submitted for publication in a journal will first have its abstract reviewed by the editor who will decide whether it should be sent for full peer review. If acceptable, the editor will then send the abstract to one or more reviewers (referees) with an invitation to review the full paper. Referees are not usually paid and editors will wish to protect their cohort of willing referees by not asking them to waste their time reviewing poorly reported studies. Hence, the abstract must be informative and well written to overcome these initial hurdles. Furthermore, the abstract may be the only part of a paper that is read by the casual reader which reinforces the need for it to be well phrased.

The abstract should ‘stand alone’ as a comprehensive description of the study, its findings and conclusions. Abstracts from papers will be published in databases such as MEDLINE and PubMed. The abstract should answer five key questions:

1	Why did you start?	*Introduction / Background*
2	What did you try to do?	*Aims / Objectives*
3	What did you do?	*Methods / study design / setting / participants / main outcome measures*
4	What did you find?	*Results*
5	What does it mean?	*Conclusions / Recommendations / the ‘so what’*

The introduction, background, conclusions and any recommendations should consist of one or two sentences only. The results section should comprise about half the word count and should not include any tables or diagrams. The first draft need not be constrained by the journal’s recommended word count. Later the text will need to be trimmed but without sacrificing the important content. Many drafts may be necessary but do not discard earlier ones. If your paper is rejected by one journal a

resubmission to an alternative journal may require a different structure, or word count.

Abstracts can be structured or unstructured. In a structured abstract the text is broken up into sections each with a separate heading. The headings will be specified in the instructions to authors. It is best to assume the headings do contribute to the word count. Here is an example from one journal:

1. Background
2. Objective(s)
3. Study design
4. Setting
5. Participants
6. Main outcome measures
7. Principal findings
8. Conclusions / Recommendations

An unstructured abstract may follow the same approach but not retain the headings. In practice, it helps to adopt the structured approach even if the instructions do not request it. Further details on preparing the abstract are in the NHS Fife study guide 'How to write an abstract'.

(7.3) Introduction

The introduction sets the scene and will include reference to the previous literature. It should end with a statement of the research question(s), the aims and objectives of the study.

(7.4) Methods

This section should be a comprehensive description with sufficient detail to allow study replication. The components should include:

- Study design
- Study site or sites
- Patients or subjects (participants)
- Recruitment issues
- Experimental procedures / Outcome Measures / Quality control issues
- Data collection
- Data analysis plan (including the level of statistical significance adopted)

The section may cite other papers for full details of the methods used though these should be given at least in outline. This can save on word count. In addition, some journals will publish online any extra detail on methods.

(7.5) Results

This section will report the results but, in general, should not interpret them as this will be part of the discussion. Any statistics estimating a parameter should be given with their confidence interval (e.g. 95%) and any comparison between groups should state the actual P-value and not just a statement such as $P<0.05$ or $P>0.05$. For qualitative studies the results should appear as anonymised quotations. Quantitative

data can appear in tables or as diagrams. Avoid unnecessary repetition between text, tables and diagrams.

Tables require careful preparation. They should stand alone and be simple, well laid out and informative. Each should have a descriptive title and, where needed, be supported with footnotes. Some journals will publish complex tables online. General advice on laying out tables includes:

(1) Order rows and columns by size with the largest values at the top left-hand corner.
(2) Numbers are easier to compare when scanned vertically (down a column) than horizontally (across a row)
(3) Make good use of space and lines and avoid large gaps
(4) Consider including row and column averages
(5) Break large tables into smaller ones

Diagrams can be used to good effect to present large amounts of data. Like tables, they should stand alone with a fully descriptive title. In general, it is best to avoid use of colour. Instead use different degrees of black and white shading where required.

For further advice on presenting data in tables and diagrams see the NHS Fife study guide ‘How to achieve success with your dissertation’.

(7.6) Discussion

It is generally recommended practice to present the discussion in five sections:

1. State the principal findings but do not over-interpret the results.
2. Acknowledge the strengths and weaknesses of the study. Be realistic and identify potential biases. Do not attempt to conceal areas of uncertainty.
3. Compare the findings with other published work.
4. State the implication of the findings for policy and practice, including any recommendations.
5. State the implications for future research and identify any unanswered questions.

Be aware that the order of sections 2 and 3 can be reversed to improve the paper’s presentation.

Be circumspect and do not over-interpret the findings to encourage an editor to accept your paper. The cost of publishing an incorrect conclusion can be very serious and embarrassing with inevitable consequences on your reputation, and that of your co-authors. Fortunately, editors (and referees) are alert to identifying unjustified and excessive claims!

(7.7) Acknowledgements

Acknowledge everyone who has helped with your study including the participants, any funding sources and any ‘significant others’ who may have provided advice on study design, participant recruitment, data analysis, review of draft manuscripts etc.

(7.8) Ethics Statement

This may be required as a separate statement or as part of the methods section. Refer to the journal's instructions to authors for guidance.

(7.9) Conflicts of Interest

A clear statement on any conflicts of interest must be made. A conflict of interest from one or more authors will not necessarily lead to a paper being rejected. However, if such conflicts are not declared and later disclosed the journal may withdraw the paper and publish a retraction statement with inevitable consequences for the reputation of all the authors!

(7.10) Author contributions to the Manuscript

Some journals request a statement specifying the contribution of each author.

(7.11) References

Most journals will recommend a maximum number of references depending on the type of report (a full paper, a short report or a systematic review).

A reference manager (e.g. Refworks, Endnote) can be useful to help organise and manage references. Searches in Medline and other databases can be downloaded direct into the reference manager which can also help format the references once inserted into the text. However, there can be both advantages and disadvantages in relying on a reference manager. For example, problems can arise when multiple authors are uploading references and using the same source file. Problems may also arise in the future over any uncertainty concerning compatibility of updated versions of the software. You should think carefully before deciding to use a reference manager.

The two principal formats for citing references are:

1. Vancouver style where references are numbered in the order in which they are cited in the text.
2. Harvard style where references are cited in the text by the author and year of publication and then listed alphabetically in the reference section.

Both styles have advantages and disadvantages. The Vancouver style is usually preferred by journal editors as it ensures the text is less 'cluttered' and is easier to read. Reference numbers are cited as superscripts or as numbers in brackets (round or square). However, some journals prefer the Harvard style as listing references in alphabetical order of authors enables readers to more easily check if a particular paper has been cited.

If you are not using a reference manager then create a table with two columns if using the Vancouver style, one for the reference number and one for the reference. If using the Harvard style the table needs only one column. Leave the grid lines clear though these can be suppressed later once the final copy is complete. In the first compilation cite all the authors (even if the journal's instructions advise otherwise). Later you can trim down the number of authors according to the journal's instructions but retain a separate copy of the full author listing. The reason is that the journal may

reject your paper and you may wish to submit it to another journal using a different style of reporting references. It is good practice when listing a reference to check the original citation for accuracy rather than just copying it from the reference list of another paper.

(8) Proof Reading

Finally, read through the entire paper to check it is concise, clearly focussed, without ambiguity or repetition. Proof read it prior to submission as it is not the role of the editor or referees to correct your spelling and grammar. A poorly prepared manuscript will encourage the editor and referees to dismiss your attempt at an early stage. Use the spell check facilities in your word processing package and perhaps ask a colleague to read the draft for content, clarity, comprehension and errors. This is particularly important if you are writing in a language other than your own. It is easy to miss spelling errors. Try reading this paragraph:

I cdnuolt blveiee that I cluod aulaclty uesdnatnrd what I was rdanieg. The phaonmneal pweor of the hmuan mnid, aoccdrnig to a rscheearch at Cmabrigde Uinervtisy, it dseno't mtaetr in what oerdr the ltteres in a word are, the olny iproamtnt tihng is that the frsit and last ltteer be in the rghit pclae. The rset can be a taotl mses and you can still raed it whotuit a pboerlm. This is bcuseae the huamn mnid deos not raed ervey lteter by istlef, but the word as a wlohe. Azanmig. I awlyas tghuhot slpeling was ipmorantt!

Source: [Anonymous]. *Apparently, 55% of people can read this easily. How did you do?*

(9) Sending it to the Editor

It has become standard practice to submit articles through an online submission process (Manuscript Central). You will need to follow the advice in the author instructions but be prepared to be asked for information that may not be given in the guidance. Experience shows the online submission instructions for some journals lack the necessary detail. Hence, you may have to abandon an attempt and repeat the process later after recovering the information requested. For example, you may be asked for the author's qualifications as well as their full address and contact details.

Some journals ask you to nominate suitable referees and others may ask for names of individuals you would prefer not to be approached as a referee. Details requested include the nominees' work address, telephone number and email address.

You should send to only one journal and not submit data that has already been published elsewhere.

A covering letter should be submitted, whether one is requested or not. The letter to the editor should point out the uniqueness of the article, the relevance for practice, and reaffirm the work is original and is not being submitted elsewhere. You may state if the work has been presented at a conference and, if so, where, when and whether the abstract was published.

Some editors may request copies of any questionnaires used particularly if they are novel. They may also ask for the data that the paper is based on to address any concerns over scientific fraud. Naturally, any data provided must be anonymised and consideration given to any data protection issues that disclosure may lead to (e.g. to countries outside the EU especially those with no data protection laws).

The process may involve submitting the paper as a single document, including the tables and diagrams, or as separate files containing text, tables and diagrams. Usually the abstract is submitted as a separate file but be aware that if the abstract exceeds the recommended word count the process will terminate.

If your paper includes photographs taken from patients (or colleagues) the editors will want to see evidence of their consent in writing. The inclusion in your paper of any copyright material published elsewhere (e.g. a graph) will also need evidence of permission to reproduce it.

The editor will first decide if the paper is relevant for their readership and worthy of sending it out for peer review. Editors will protect their pool of referees as the supply is limited. Hence, they will only approach a potential referee if the paper justifies their consideration.

(10) Referees

Referees are carefully selected and, in the main, are not paid. They are busy professionals and usually remain anonymous. Some journals use ‘blinded’ referees in that the referee is unaware of the identity of the authors. On occasion, multiple referees may be approached with different expertise (e.g. a clinician, a statistician) and asked by the editor to comment within their respective fields. However, an editor may send a paper out to only one referee depending on the specialty and other considerations.

A referee’s role is to help authors improve the quality of their paper by offering constructive criticisms and not just to advise the editor as to the robustness and originality of the work. Ultimately, they help the editor make decisions. A referee may recommend acceptance of a paper as it stands, or resubmission with changes, or outright rejection. However, the opinions and recommendations of referees do not always coincide and an editor will not necessarily accept their recommendations even when two or more do agree.

Referees will have a publication record of their own and they should be able to sift out poor quality and potentially biased studies. However, poor studies do get published even in high quality journals so the process is not water-tight.

Referees are asked to respond within a finite period, often as short as three weeks to achieve a journal’s quality standards. This can be troublesome as some papers require a great deal of scrutiny which may involve the referee having to run a literature review of their own. However, the time to obtain peer review is much shorter nowadays representing a marked improvement over practice in the past when reviews could take many months, even years.

The referee report may be short if the paper is very good, or very bad. Referees are looking for a well written article that reports an original, well-designed study on an

important topic. They will want to be assured that observations are unbiased and in sufficient quantity to satisfy any statistical considerations. Any conclusions drawn from the analysis should be fully justified and the data not over-interpreted. Referees may suggest changes to the paper including correction of errors, citation of references the authors may have overlooked, a reanalysis of the data or reinterpretation of the findings. They are usually requested to write a report for disclosure to the authors and a separate, confidential report with their recommendation to the editor. The options include rejection with no advice about resubmission, acceptance with changes, or acceptance as it stands (but this is rare).

The editor will consider the recommendations of the referees and contact the authors with the referees' reports and the journal's decision. An editor may ask the authors to respond to the comments made and revise the paper for resubmission. However, it has been known for an editor to ask authors to discount comments from a referee particularly if they conflict with the views of another referee, or the editor!

Editors will notify the referees of the journal's decision and will include all the (anonymised) referee reports. In this way referees can learn from the reviews of others to improve the overall peer-review process.

(11) Options if the paper is rejected

A decision to reject a paper is not necessarily an indication that the work is sub-standard. It simply may be that the editor has just accepted another paper on the same topic! Your response should depend on the feedback from the referees and editor. If the referees consider the work is *'fundamentally flawed'* or *'subject to substantial bias'* you may have difficulty rescuing the study. You could submit the article unchanged to another journal but be aware that it may be sent to the same referees!

It is possible to challenge a referee's report particularly if you feel the referee has misunderstood or misinterpreted some aspect of the text. It may be your description of that aspect is ambiguous or simply wrong. In this case you can write to the editor pointing out *your* flaw and inviting the editor to reconsider the decision to reject the paper. However, it is best to avoid getting into a long debate with the editor whose decision, ultimately, is final.

The rejection letter from the editor will be tactful as they will not wish to cause offence.

Example of a tactful rejection letter:

"Thank you for submitting your paper which we found both interesting and scientific. Unfortunately, the interesting parts were not scientific and the scientific parts were not interesting, hence we are unable to accept your paper for publication on this occasion"

Source: anecdotal evidence attributed to the editors of the BMJ

The reasons for rejection given by the editor may include (1) it is too specialised for the journal's readership, (2) the article is unsuitable in its present form (but you have not been invited to revise it), (3) the work is not original and does not add anything

new, and (4) it was a good study but the journal has limited space. Pressure on space in high quality journals with large impact factors is considerable and many quality papers will be rejected for this reason alone. In these circumstances another option is to revise the manuscript following the advice from the referees and submit it to another journal, perhaps with a lower impact factor. It is a common experience to have to submit a paper to more than one journal before it is finally accepted.

When submitting a paper to another journal you may be asked to provide any referee comments from a previous submission, your response to those comments and any revisions made to your paper arising from them. It is important to be honest to help the editor decide whether to send your paper out for peer review. However, in your response to the editor it is acceptable to challenge any negative views of a previous referee if you do not agree with the criticism.

Finally, if the referees' comments are so damning you may decide to tear it up and start again concentrating on aspects of the study that are robust. However, you should consider if it is worth it.

(12) Options if the paper is accepted

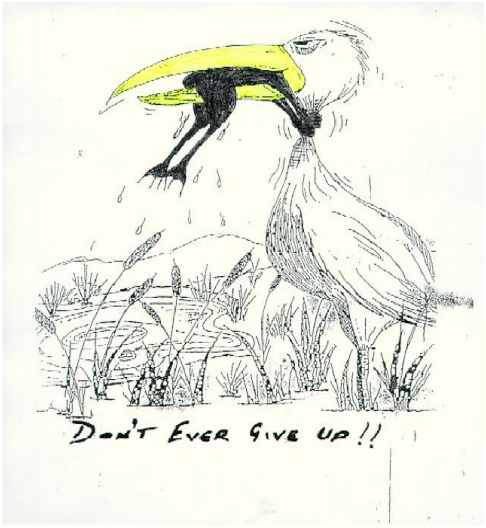
After your initial euphoria copy the editor's email to your co-authors and wait for the galley proofs to arrive. Proofs require immediate checking so make sure the journal's timetable can be met and that the co-authors are going to be available to deal with any issues. Ideally, the proofs should be checked carefully by all the authors against the original text. All tables and diagrams must be checked to ensure no errors have crept in from the editing process, particularly if they have been redrawn or re-formatted. Particular attention is required over placement of footnotes to tables and diagrams. However, reading proofs is not an opportunity to rewrite the text so keep any alterations to a minimum. Any changes should be marked on the PDF copy using recognised proof correction marks (often supplied by the editor). The marked proofs should be scanned in and returned promptly within the time requested (usually 48 hours). Some journals assume the proofs are error-free if they are not sent back within the specified time frame.

About now you and your co-authors will be asked to assign copyright to the journal. Make sure all the authors are alert to this and are available to sign the relevant document either electronically or with a wet ink signature, and return it as instructed.

Your paper may be published online before appearing in the print version so check the final published work carefully for any errors. Finally, be ready to respond to any critical letters received by the editor. These may be published in future issues of the journal along with your replies.

(13) Summary

Publishing work is very rewarding and intellectually stimulating. However, the process is lengthy and often frustrating involving many attempts with different journals. Rejection is disheartening but you should not give up as the effort is worthwhile once the paper is published. Ultimately, securing a publication will improve your scholarship, make you a better practitioner, add to your personal development and CV, advance your career and set you above the competition when applying for jobs by showing to a potential employer that you can see a task through to its conclusion!



Source: anonymous

(14) References and further reading

There are many sources of advice on writing for publication on the internet, in books and in journals. One source worth a Google search is Tim Albert who is a trainer in medical writing. Some references and sources of guidance are:

Albert T. The problem with writing. *BMJ (Careers)*, 2002; 325: S180

Albert T. How *not* to get published. *BMJ (Careers)*, 2005; 331: gp254

Albert T. A-Z of Medical Writing. BMJ Books, 2000, London.

Happell B. Writing for publication: a practical guide. *Nursing Standard*. 2008; **22** (28, March 19th), 35-40.

International Committee of Medical Journal Editors. Uniform requirements for manuscripts submitted to biomedical journals. www.icmje.org See also: *Ann Intern Med* 1997; **126**: 36-47 or *JAMA* 1997; **277**: 927-934.

NHS Education for Scotland, Guidance on getting published, 2018. https://learn.nes.nhs.scot/2795/skills-for-learning-at-work/getting-published.

Plain English Campaign. www.plainenglish.co.uk (*see 'tools' including* 'A-Z of alternative words', 'How to write in plain English' and 'How to write medical information in plain English').

Skelton JR, Edwards SJL. The function of the discussion section in academic medical writing. *BMJ* 2000; **320**: 1269-1270.

Writing for academic journals. 4th ed. Rowena Murray. Open University Press, 2019.

How to write well. A guide for health and social care students. June Keeling, Hazel M Chapman and Julie Williams (Editors). Open University Press, 2013.