

ISSUES IN MEDICINE

But is it publishable? Mastering the MMed message

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The research requirement for South African specialist registration offers opportunities and challenges. For some clinicians it may spark a lifelong interest in clinical investigation, while for many others it may provide a potential publication opportunity. Integrating the specific requirements of an MMed mini-dissertation with those of standard medical publications can be difficult for first-time authors and their supervisors; published guidance caters to full-length laboratory Master's or doctoral research. We suggest that research is more likely to be publishable if it is locally relevant, has a clear clinical message and is coherently presented.

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The South African (SA) specialist registration requirement for a research MMed degree is generating a new pool of potentially publishable material. The registration requirements not only have an impact on degree candidates and their supervisors, but also on the academic research enterprise, including medical publishers. Health Professions Council of South Africa (HPCSA) guidance on the research component for specialist registration allows for *either* a stand-alone thesis *or* recognition of material published in peer-reviewed journals. The academic research community emphasises both the successful and timely completion of the MMed degree *and* conversion of the research into a research publication in a peer-reviewed journal.

Specialists in training, for whom final registration is paramount, and their supervisors, may be unclear regarding the best route to complete the research component. Publication has personal career advantages, mobility opportunities and curriculum vitae benefits, in addition to the dissemination of new, locally relevant clinical information. While MMed theses contain the components necessary for publication, many generate 'me too' messages of limited relevance beyond institutional degree requirements, leading to manuscript rejection and delays in HPCSA registration. This article offers some comments on the publishing of MMed research.

Publication probability

Some estimates suggest that only half of all medical research is published.^[1,2] Research conducted purely to gain specialist registration may fare even worse. A study from Finland showed that only 23% of medical theses were published in peer-reviewed journals,^[3] with a similar figure (18%) from Turkey.^[4] The SA MMed performs somewhat better, with publication conversion rates of 30 - 60%.^[5] For first-time authors, the odds against successful publication are greatest with the first submitted publication, but once the first submission has been accepted, the probability of successful publication increases with each subsequent submission.^[6]

Selfie or scientific progress?

Contextualising the key purpose of a research project assists in determining publication probability. A thesis demonstrates to

examiners and the university that the candidate has met educational objectives. At an MMed mini-dissertation level, the requirement for external scientific value may on some occasions be de-emphasised. Theses rest on a spectrum between 'selfie science', focused on showcasing the research prowess of the candidate, and at the other end, valuable scientific advances, where publication establishes the researcher in an external knowledge-creation hierarchy.

Message to the world

Does the MMed degree contain a novel methodology or new technique that is worth sharing? Is the narrative literature review sufficiently comprehensive to submit as a state-of-the-art synopsis of the research field? Has more than one remarkable result emerged from the analysis? A journal manuscript should have no more than one research question, with a maximum of three research sub-questions.^[7] If there are more than three succinct sub-questions, it may be appropriate to consider more than one publication. Multiple messages may drown each other out.

The numbers game

Most clinicians are not wildly enthusiastic about statistics, and the KISS (Keep It Short and Simple) principle works well here. An article needing heavy statistical embellishment is probably trying to hide flawed methodology and trot out long names because they sound impressive (or simply because the researcher wants to share the pain of recent re-acquaintance with terminology left safely behind as an undergraduate).

Articles based on MMed-level investigation usually need only a few statistical tests to capture the message, especially if based on diagnostic or therapeutic questions.

Observational information creates difficulties because of multiple confounders and potential selection biases, and there is a temptation to regress such data into submission. When sample size is small, major statistical manipulation is often unwise and not very helpful, as is the conclusion that the experiment should be repeated on a larger sample. Underpowered observational datasets show their weakness most clearly when trying to put confidence intervals around measures of association. An exciting relative risk with a confidence interval

extending from 10% to 90% is best left unreported. If a small number of hypotheses were not in a statistical plan prior to collecting the data, thrashing the latter until it screams is ill advised.

On occasion, however, observational studies or qualitative insights from research can be clinically powerful, but not easily represented numerically. Such information may be publishable.

Is there madness in your method?

The credibility of a study rests on the rigour of the methods. The basics of the method are established in the introduction, showing that the research approach is the best available by citing pertinent literature. Validation of the research approach encompasses the entire article, beyond the methods and materials section. While a publishable research investigation is seldom perfect, it should always be rigorous.

The methods and materials section should be an objective record of the research procedure. A description of the methodology should be sufficiently detailed to allow anyone to duplicate it, but it might be better if some or all of the detail are incorporated in an electronic appendix. Should the research method be new, or the questionnaire novel, a pilot study of the method to demonstrate its soundness is helpful. Fundamental to the methods section is the selection of participants, full description of the methods, study design, data analysis (statistical or descriptive) and mention of ethical considerations.

Common problems with methods are sample numbers that have been omitted and ambiguity with regard to the data source and study site. Further potential issues relate to incomplete descriptions of what will be measured, how it will be measured, the units of measurement and how the data will be handled. Writing should be in the past tense and address the major method first. The description of steps should follow a logical order. Appropriate tables and flow diagrams enhance clarity, but should not be included simply because they seem decorative or took a long time to prepare.

Unpacking a thesis for journal publication

Readers of clinical articles, as all humans, respond to stories – apart from familiar structure, we like to have our interest quickened. We like to become immersed in the narrative (it must flow smoothly without distractions, such as incompletely crafted writing, where we focus on the mechanisms of the tale rather than the story itself). We like a satisfying and clear conclusion with a memorable final message. Publishers need to balance a good story against journal space, topicality, quality and interest to their general readership. Is the study large enough, generalisable, with a useful, easily understood new message of interest to general readers, which you would enjoy reading yourself?

Persuasiveness

The art of ‘inducing by argument’ or ‘influencing the mind’ is not easy. To write persuasively you need the reader (and reviewer or editor) on your side: to believe the facts, agree to the line of reasoning, accept the critical stance and assume the line of thought. Reviewers and editors are overworked and have many manuscripts to appraise. Ensure that they have quick answers to each of their questions: why it was done (aim), how it was done (methods), what was found (results) and what it means (significance). An application that is easy to read, enjoyable and also educational has an increased chance of acceptance.

Structure

Plan each paragraph, with one theme per paragraph. Have one point per sentence and place the main point at the beginning of the sentence. Avoid long convoluted sentences, weak explanations and use of the same word twice in one sentence. Use the grammar checker provided for free with all word processor software. Write with passion; if you are not enthusiastic, no one else will be.

Validity

Is the study large enough? Elegant studies can provide useful answers from limited information, but tiny observational studies are often disappointing, more so if even the main conclusion is imprecise. Very small datasets can often be outright misleading in the face of selection or interpretation bias, and editors and reviewers are rightly wary of such work.

Generalisability

Parochial information applies only to a very specific healthcare context. In some instances, this may be interesting, but in general, when readers are unsure if the patients described bear any resemblance to their own patients, they are less enthused by the conclusions. Collecting smaller samples from a wider base may increase generalisability, but if the same selection pressures apply, then this simply yields a larger biased sample. Exploring these issues at the design stage, and attempting to avoid them, is far easier than trying to explain them away later.

Interest

Does it move? Readers, reviewers and editors, as all humans, are more interested in change than static snapshots. Knowing about prevalence and outcomes is useful epidemiologically, but actively looking for differences, explanations, changes over time or any measure that may give insight into causation or management is often more interesting and useful.

Originality

Is it new or just ‘me too’? Reporting that another healthcare environment encounters the same phenomena as others is useful and reassuring for the first few times, but rapidly ceases to be news. The exception is an unstable finding, with different observers obtaining different results. Adding another set of observations to a heap of inexplicable ones is, however, less helpful than re-thinking trial design and proposing an explanation for the differences.

Utility

Is the message useful? If information can inform clinical practice, and change the way we think or do things, it is more useful than information that tells us something but does not change anything. ‘So what’ is dismissive when applied by others, but a useful thinking tool when planning a study.

Comprehensibility

Can the research be understood easily? A message that is easy to grasp has more impact than one that requires re-reading owing to complexity of content or presentation. Keep it simple. If it is not simple, you probably are not explaining it well, or perhaps there is a second message tangled with the first? Can you explain it to a lay person?

Data deluge

There is a natural temptation to provide the reader with a generous proportion of data in which the author has been immersed, often for

months on end. Keeping the key message in mind is a useful way of differentiating core results from mildly interesting but unnecessary noise. Often a single well-crafted table can convey the entire message; if this is the case, be proud of it and do not repeat the information in less digestible text.

Excuses

Running out of time, patients, money or enthusiasm may be why a study is inconclusive. Being told this is frustrating and unhelpful, and readers may wonder why the article was inflicted on their busy reading space.

Disconnected references

References that do not support the point being made, that are too vague to be helpful, that have been supplanted by newer information or that are incorrect, can be very frustrating. Some references that have been incompletely digested by users may even say the opposite of the point being made.

Conclusions

Much local MMed research has the potential to provide new and meaningful insights – such messages are precious and clearly worthy of dissemination. Identifying such information in a mass of research data, recognising its importance, and turning it into an incisive and easily assimilated message are the heart (and art) of article writing and will help to transform MMed research into a ‘svelte, pithy and publishable’ manuscript.^[7]

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