

How to author a research proposal for a dissertation or thesis: A guide for South Sudanese medical postgraduates

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ABSTRACT

A research proposal is a three-chapter document that outlines a study to be conducted for a dissertation or thesis. The three chapters of a proposal include the Introduction, a literature review on the chosen topic, and the research methodology proposed for the study. After successfully navigating the proposal process and receiving approval from the academic research team and the Research Ethics Committee, one can proceed with the actual research project. In South Sudan, all healthcare-related research proposals must be approved by the South Sudan Research Ethics Committee (SSREC) based at the Ministry of Health, as institutional committees still need to be established. Authoring a research proposal as a postgraduate medical professional in a resource-poor country like South Sudan poses challenges related to inadequate healthcare infrastructure and research facilities and limited access to the internet and medical libraries. Therefore, it is important to consider the scope of the proposed research carefully and select a clear topic that addresses a significant medical topic relevant to the population's healthcare. This overview aims to guide medical postgraduate students in South Sudan and other resource-limited regions on their dissertation and thesis projects.

Introduction

It is crucial to remember that a dissertation or thesis proposal is a scholarly document. The writing must adhere to prescribed rules, formats, and conventions known as scholarly writing, distinct from those of creative or technical writing.^[1] Your supervisor will be looking for specific attributes of scholarly writing, including precision and accuracy, clarity, and objectivity supported by in-text citations.^[2] It is important to avoid colloquial expressions, pronouns, and contractions, minimize abbreviations and acronyms, and consistently use the active voice rather than the passive voice. Several citation styles exist, including Harvard, APA, Vancouver, and MLA, and your institution will indicate which one to use. The Vancouver formatting style is the one used by most biomedical journals. The proposed research should contribute meaningfully to medicine in general and the research community and be supported by enough accessible publications for reference.^[2] Additionally, you must ensure you can conduct the study within the anticipated time limit with available resources.

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If you are a medical professional planning to conduct research in South Sudan as part of a higher academic degree, below is an overview of the three chapters and the key information to include in each to produce a compelling proposal. Your research and the eventual writing of your dissertation or thesis will only take place after the research committee has approved your proposal. A well-developed proposal is critical in convincing the research committee of the value of your proposed research and may also enhance your chances of securing funding. With minimal adjustments, these three chapters will form the basis of your dissertation or thesis. Always add sources to your work by following the citation guidelines of the institutional or journal formatting style to avoid plagiarism.

Note that during this stage, refer to your work as the “proposed research study” rather than “this study.” Below is a structured guide to help you effectively draft your dissertation proposal, starting with the title page, introduction, literature review, and finally, the research methods.

Title Page

Begin with the title page formatted strictly to the chosen style guidelines. For example, in The Vancouver formatting style, the proposed dissertation or thesis title is centered; skip a few lines, then enter your name and credentials. Then indicate the institution or organisation name and department name followed by the contact information, including address, email, telephone number, and date. Finalise by indicating the word count. The title should be concise and capture the essence of the proposed research without being wordy. The formatting style (e.g., APA, MLA, Vancouver, Harvard.) for the title page and, indeed, the whole proposal and eventual dissertation or thesis will follow the style used in your institution or provided by your institutional research committee. Your title page is followed by a summary of the proposal, usually not exceeding 250 words, followed by a list of keywords that summarise the content of your proposal.

Chapter 1. Introduction

The introduction sets out the problem concisely to ensure that it is clearly understood. It is essential to demonstrate that the research topic is worth further investigation globally and locally.^[2] Therefore, this section aims to provide a brief overview of the available literature on the proposed research topic, highlighting its relevance and

importance within the broader medical field. At this stage, it is crucial to convince the reader that this topic warrants serious scientific scrutiny. You can narrow down to specific health challenges in South Sudan, discussing how the medical issue you propose to study disproportionately affects the local population due to resource constraints, limited healthcare infrastructure, and social determinants such as poverty, education, and access to healthcare services.^[3] Include relevant data highlighting the prevalence or burden of the specific health issue in South Sudan, as these will emphasise the need for the proposed study.

Provide a brief description of the problem, including its clinical relevance, and discuss the specific challenges faced by South Sudan in addressing the health issue. This might include a lack of health professionals, inadequate diagnostic tools, poor healthcare infrastructure, or socio-economic barriers.^[4] Illustrate the impact of the medical issue on the health, quality of life, and economic stability of South Sudanese. The purpose of a medical dissertation or thesis is to generate new, significant knowledge that will enhance understanding of a medical condition or problem. Do not miss the opportunity in this section to identify problems that emerge from the literature, as many scholarly papers and journal articles conclude with recommendations for further studies.^[5] Your purpose statement clearly states which gaps in the literature your proposed research will attempt to fill and the research methods you will use. Typically, the last sentence in this section is a single, clearly focused problem statement that indicates the specific issue or medical condition to be researched. At this point, you can state the primary research question that will guide the proposed dissertation based on the narrowed-down problem statement. One or several research questions can be formulated for a quantitative research study.

Chapter 2. Literature review

The literature review is designed to summarize the existing medical research relevant to your proposed study, pinpointing gaps in current knowledge and justifying the necessity for your research. Start by clarifying the purpose of the literature review, emphasizing that this chapter will deliver a thorough overview of pertinent current research and identify the gaps that your research aims to fill.^[5] Outline your research strategy by specifying the medical database utilised for the literature review, such as PubMed, Medline, Cochrane Library, Google scholar, and other peer-reviewed sources. Include details on the search terms and keywords employed to locate relevant studies. Additionally, clarify any criteria used for including or

excluding any studies, such as time frame, study design, or language. This approach will enable the reader to understand and evaluate your methodology in conducting a thorough and scientifically sound review. Summarise key studies, detailing their methodologies, findings, and relevance to your proposed topic. It is important to note that the literature review chapter of the proposal should always be written in the past tense, whereas chapters one and three of the proposal can be expressed in the present or future tense.

Critically assess the strengths and weaknesses of each study you identify in the literature review, focusing on aspects such as sample size, study design, or potential biases that might impact the reliability of the findings. Illustrate how different studies converge or diverge in their conclusions and highlight any conflicting results, along with possible explanations for these variances.^[6] It is essential to identify and discuss gaps in the existing literature, which may stem from methodical limitations, incomplete research, or areas yielding inconclusive findings. Discussing the significance of these gaps and how your proposed research aims to address them will illustrate your comprehension of the academic conversation surrounding your topic. Identifying these gaps will lay a foundation for your research questions and objectives.

Furthermore, it is vital to articulate clear and specific research objectives based on the identified gaps in the literature review. Justify your proposed study by explaining how it builds upon existing work and clarify the need for your research by demonstrating its potential to contribute new insights, methodologies, or clinical applications.^[7] Also, identify unresolved questions in the literature that your study will address and advance the field of study. Conclude your literature review with a clear statement on how your proposed research will fill existing gaps and advance the field of study. Use a consistent citation style for your references, such as the Vancouver or APA, depending on your institution's guidelines.

Chapter 3. Research Methodology

This chapter is crucial for your proposal. Even in a developing country like South Sudan, it is important to focus on the standard research components while acknowledging the unique challenges posed by resource constraints, poor healthcare infrastructure, and cultural context.^[3] Start by briefly summarizing the research question or hypothesis and explain why it is important to study this in the South Sudan context. Outline the

research design, including population sampling methods, data collection, and analysis techniques that you will use.

^[8] Clearly indicate whether your study is observational (cross-sectional, cohort, or case-control) or experimental (e.g., randomized controlled trial), and explain why your chosen design is appropriate for your proposed research question. Specify the instruments you will use, such as surveys, interviews, or other methods, along with any analytical techniques. This section is vital as it establishes the feasibility of your proposed study and provides a road map for how the research will be conducted.

Provide a detailed description of the healthcare or community environment where your proposed research will be conducted, be it rural, urban, a clinic, or a community health centre. Justify your choice of setting by explaining its relevance in addressing the research question, particularly considering the healthcare challenges faced in South Sudan.^[3,4,12] Identify the target population for your study by defining its characteristics, such as age, sex, and specific health conditions. Additionally, outline the inclusion and exclusion criteria for your research, along with a clear rationale for these criteria. In a population survey study, a formal method is employed to calculate the necessary sample size, considering potential participant dropouts and the statistical power required for obtaining reliable results while also considering the limited healthcare data available in South Sudan.^[8] Discuss the chosen sampling method (e.g., random, convenience, or stratified sampling) and justify its suitability in the local context.

Carefully consider your data collection methods by detailing the techniques you will use, such as interviews, surveys, medical tests, or focus groups. Specify the tools you intend to use, such as questionnaires or diagnostic tests, and indicate whether these tools have been validated within the unique cultural and resource-constrained environment of South Sudan. If relevant to your proposed research, describe any existing health records, national surveys, or databases you plan to use, explaining their reliability and accessibility in South Sudan. Additionally, clarify who will be responsible for data collection, whether it will be trained healthcare workers, medical students, etc. Describe any training that will take place to ensure the accuracy of the data collected. Considering the local cultural and resource contexts, describe how you will address ethical concerns, including informed consent, confidentiality, and any potential risks to participants. Finally, explain the process for obtaining the necessary ethics approval from the appropriate authorities.

At this stage, identify the main independent variables (exposures, treatments) you are interested in studying. Then, define the dependent or outcome variables you will measure (disease, prevalence, patient outcomes). Also, mention any expected confounding factors (socio-economic status, access to healthcare) and explain how you will control for them in the analysis. Then, describe the statistical analysis methods you will use to analyze the data (t-tests, Chi-squared tests, regression analysis), justifying their suitability for the type of data and research design.^[10] Mention the software tools you plan to use for analysis (SPSS, STATA, etc.), ensuring they are accessible and feasible in your research setting. Next, you explain how you will deal with missing or incomplete data, a significant issue in resource-poor countries like South Sudan. Identify any limitations to your proposed research, such as small sample sizes, challenges in accessing health records, or variability in data quality, and discuss how you will mitigate them.

Next, estimate the resources required for the study (e.g., equipment, personnel, travel), considering any challenges and constraints you will face when researching South Sudan. Mention any potential funding sources or partnerships that could support the study.^[3,4,10] Offer a realistic timeline for the proposed research, bearing in mind delays due to logistical challenges like transport, difficulties recruiting participants, and slower ethical approval processes. Next, address the ethical and cultural considerations. Cultural sensitivity is essential when doing population-based research. Discuss how local cultural norms such as gender dynamics, beliefs about illness, and healthcare-seeking behaviours will be respected. Outline any plans to involve community leaders or stakeholders to ensure that the local population receives and understands the research well. Mitigate potential challenges such as limited healthcare infrastructure, participant dropout, and unreliable data by proposing contingency plans. In the case of clinical trials, outline the safety monitoring procedures and protocols you will use to ensure participant wellbeing.

Conclude this chapter by summarising the strengths of your proposed research methodology and how it is well suited to answer your research question(s) within the context of a developing country like South Sudan. Several books and articles on dissertation and thesis writing are available online to help you plan and write

your proposal and your complete dissertation or thesis.^[9,13,14] By framing your proposed methodology as above, you adhere to rigorous academic standards and show that you have considered the specific logistical, cultural, and ethical challenges of conducting research in a resource-poor country.

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