Twelve tips to manage a research project—advice for the young investigator

Flavia Fonseca Fernandes[1,2,3], Juliana Carvalho Ferreira[1,4], Cecilia Maria Patino[1,5]

ILLUSTRATIVE SCENARIO

During the 2023 ATS-ALAT MECOR course recently held in Panama, a group of early career physicians from Latin America shared their experience on conducting research in their home countries. They expressed excitement about getting involved in research studies but were feeling anxious at the prospect of successfully carrying out both clinical and research activities. In search of guidance, they created a group to exchange experience and, inspired by the book by Hulley et al.,[1] they developed the following guide:

BEGINNER'S GUIDE TO RESEARCH PROJECT MANAGEMENT: 12 ESSENTIAL TIPS

1. Choose a familiar topic: start by selecting a topic that you enjoy and are knowledgeable about. This will make your research project more pleasurable, and likely to achieve high quality. It will also allow you to identify knowledge gaps more easily. Make sure you carry out a comprehensive review of the literature available, identifying high-quality articles which could potentially be references for your project and finalized manuscript.
2. Find a mentor, not just an advisor: look for a mentor who has experience in mentoring, shares your interest in the topic, has availability to meet regularly, and can guide you effectively.

Figure 1. Tips to research project management: choose a knowledgeable topic, find a mentor and a team, understand your institution and the ethics committee, plan your research, make a reasonable schedule, consult a statistician, and disseminate the results.

3. Understand your institution: identify what resources are available in your department or explore alternatives such as public databases and collaborations with other research groups.
4. Plan your research: develop a feasible research protocol that describes the research question and hypothesis, study design, study population, the intervention or exposure, and expected outcomes. Write out the research plan following your institution's guidelines. Be reasonable!
5. Develop a comprehensive statistical analysis plan: make sure you understand your study design, variables, and the appropriate statistical tests and processes. Whenever possible, consult and work with a statistician prior to data collection and throughout the study.
6. Make ethics a priority: ensure that your project addresses ethical aspects, including risks, benefits, and compliance with research guidelines.
7. Consult the Research Ethics Committee: engage with your institution's Ethics Committee or Scientific Council to understand their requirements and to receive valuable guidance. Some offer free consultations that can save you a lot of wasted time going back and forth with the project.
8. Create a manual of procedures: develop a manual of procedures that describes, in detail, how the research will be conducted, data collection procedures, and data storage processes. Test data collection forms to ensure they are appropriate for the study.
9. Set a realistic schedule: make sure to create a schedule that accommodates unexpected delays and that the duration of each step is feasible in your environment. Research often encounters unforeseen obstacles.
10. Ensure data collection uniformity: train your data collection team using a standardized procedure plan to ensure consistency.
11. Expect the unexpected: keep your focus when unforeseen situations or delays arise during planning and execution. These are common in research. Stay calm and carry on.
12. Disseminate research results: the work is only half done after data are collected. The final step is documenting your findings for an oral presentation, a poster at conferences, or an original manuscript for publication.

REFERENCE

1. Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. Designing clinical research. 4th ed. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins; 2013.

1. Methods in Epidemiologic, Clinical, and Operations Research-MECOR-program, American Thoracic Society/Asociación Latinoamericana del Tórax, Montevideo, Uruguay.
2. Serviço de Pneumologia, Instituto de Gestão Estratégica em Saúde do Distrito Federal, Brasília, Brasil.
3. Unidade de Pneumologia, Hospital Regional da Asa Norte, Secretaria de Saúde do Distrito Federal, Brasília, Brasil.
4. Divisão de Pneumologia, Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo, São Paulo (SP) Brasil.
5. Department of Preventive Medicine, Keck School of Medicine, University of Southern California, Los Angeles (CA) USA.