

Aims, objectives and research questions

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Outline

- Aim
- Objectives
- How to assess SMART
- How to define objectives
- Research questions
- Group work

Aim

- **The aim** is about what you hope to do, the overall intention in the project. It is what and/or where you intend to be by the end of the project. It's what you want to know and the reason for conducting the research. An aim is therefore generally broad. It is ambitious, but not beyond possibility.
- To reduce world hunger
- To reduce the risk of maternal malnutrition in Nigeria



Objective(s)

- **The objective(s)**, and there are usually more than one, are the specific steps you will take to achieve your aim. This is where you make the project tangible by saying how you are going to go about it.



Objective(s)

- Study objectives need to be SMART
- With **S**pecificity, there is clarity about what needs to be done
- When **M**easureable, the right study design can be determined
- When **A**chievable, the variables can be measured
- With appropriate study design , study is **R**eliable
- When it is **T**ime bound, the study can be finite
- SMART objective(s) respects the principle of beneficence



Specificity

- Objectives need to be **precise**. Vague statements are not helpful
- **Critique the following objective with respect to specificity**
- *To determine the association between the sociodemographic profile of females and their menstrual cycle*



Measureable

- The objective needs to draw boundaries around an exploration.
- You are able to identify the explanatory and outcome variables.
- **Critique the following objective with respect to measurability**
- *To identify the relationship between sociodemographic profile of females and their menstrual cycle*



Achievable

- Objectives have to be practical and doable. Reviewers generally look to see if the objectives are possible (not broad) and researchable.
- Ethics also guide considerations of what is possible
- You are also able to determine the study design

- **Critique the following objective with respect to it being achievable**
- *To measure the impact of age and ethnicity of 15-19 year old females on their menstrual flow in Nigeria*



Reliability

- In research terms, reliability refers to consistency. When something is reliable in science this indicates some level of consistency.
- **Critique the following objective for reliability**
- *To determine the association between dress colour and mode changes in adolescent females during their menstrual periods.*



Time bound

- The objectives also act as **project milestones** and so it is helpful to express them as things that are able to be completed
- For example scoping an archive of materials will have an end point.
- **Critique the following objective for time limit**
- *To conduct a systematic review of effect of climate changes on menstrual flow of adolescents 15-19 years old.*



Aims and objectives

- Aims and objectives can't be rushed. They generate the research questions and determine the research design. They are the foundation on which the entire project is constructed.
- Aims and objectives needs to be sorted at the beginning of the research project planning process. The literature review helps to give clarity about this.



Objective(s)

Study objective(s)

- **Primary objective(s)** for which you calculate sample size. They can produce inferential results.
- **Secondary objective(s)** are analysis possible from the data collected for which the study is not powered for. They can generate hypothesis except there is evidence suggestive that the study is powered enough to produce inferential results. Adjustments during inferential analysis may be limited due to limited access to data for confounders.
- **Tertiary objective(s)** are usually exploratory and can only generate hypothesis.



Research questions

- Your research questions evolve from the objectives. Some grants ask for both study objectives and research questions and others only ask for research questions
- Unlike the thesis, the research questions for grants should demonstrate it has social value by improving health conditions and practices. The research questions **must** also be answering a true gap in knowledge (equipoise).
- The question should also answer contemporary issues (SDG) and suggest creativity and innovation.



Possible questions

- Does intimate partner violence increase the risk of pre-school children to caries?
- Is intimate partner violence a risk indicator for caries in pre-school children?
- What is the association between women empowerment and caries in pre-school children?
- What is the magnitude of the impact of maternal mental health on the caries risk of pre-school children?



Group exercise

- Review the objectives and research questions
- Identify what is (in)appropriate with the objectives and research questions
- Reconstruct the objectives and research questions



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