

CME on RESEARCH METHODOLOGY

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Prof. AHM Ahsanullah Lecture Gallery
Green Life Medial College



I need to
work on my
research
skills.



Steps of Developing a Research Proposal

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Session outline

- Meaning of research proposal
- Importance of research proposal
- Essential ingredients of a proposal
- Parts of a research proposal
- Explanation of each section of a proposal
- Evaluation of a proposal
- Improving the odds!



What is a research proposal ?

What is a research proposal?

- A research proposal is a **plan** of doing a research
 - it describes the going-to-be study in a summary form
 - fund approval or permission of conducting a survey are based on the quality of the proposal
 - audience: supervisors, examiners, ethical review committee, peers



What is a research proposal? contd...

- A document with two major objectives:
 1. analyze and synthesize the existing research about particular topic
 2. describe the researcher's idea for a new study



Research Proposal Writing



Importance of a research proposal and The essentials

Importance of a research proposal

- It is prerequisite for a higher degree
- Helps to get approval from the approval committee to start the actual research
- It conceives the project
- It crates impression as a potential researcher
- It serves as a contract between the researcher and funder
- Personal interest

The essential ingredients!

The issue

What problem
does this
research address?

Research design

How the research
will achieve its
objective?

Benefit

What will the
research
contribute?

Research proposals helps us to

OUTLINE steps in our proposed research

provide us with intellectual **CONTEXT**

JUSTIFY the
research

be **CREATIVE**

THINK through the experiments

anticipate
potential
PROBLEMS

anticipate a
realistic
TIMETABLE



Parts of a Research Proposal

Parts of a proposal

- **Project title**
- **Investigator's detailed information**
- **Outline / Contents / Index**
- **Summary / Abstract**
- **Introduction** (section: 1)
- **Literature review** (section: 2)
- **Methods and materials** (section: 3)
- **Limitations of the proposed research**
- **Ethical issues** (section: 4)
- **Budget** (section: 5)
- **Reference list / Bibliography**
- **Annexure: Timeline / Work plan and Questionnaire**

Know the requirements BEFORE you start

Title

- Mini-abstract
- Clear, represents the objective
- Concise
- Stating the problem under investigation
- Interesting
- It's possible to change the title before submission of the proposal

Particular's of the Investigators

- Academic and contact details of principal investigator and co-investigators
- Institutional details



Introduction includes:

- Background
- Rationale / Justification of the study
- Problem statement
- Research question and Hypothesis
- Objectives
- Outcomes
- Conceptual framework

Section I: Introduction

- Introduction should be short
- The problem should be stated in such a way that it's importance and relevance is realized by any one who reads it
- Once the field of interest identified, prepare one or more research questions to answer

Background and Justification

- should include:
 - the theoretical rationale
 - pertinent facts and statistics
 - observation, or
 - claims that have lead the investigator to propose research question

Problem statement



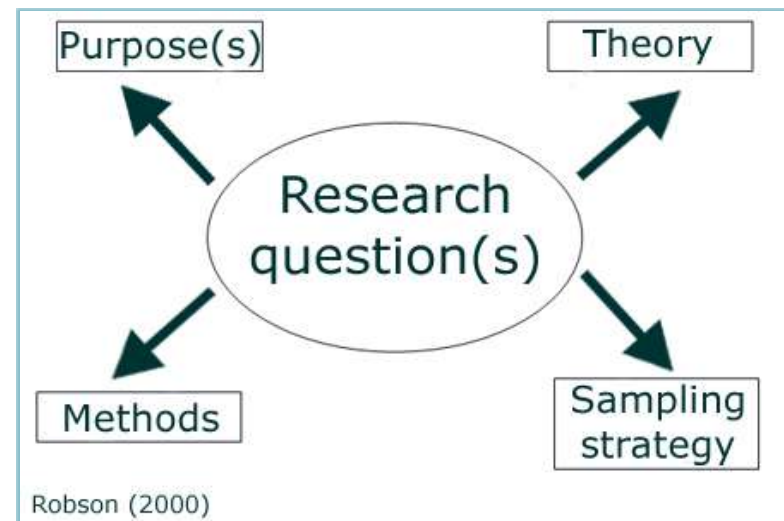
- the first step in any research is to identify the topic of interest
- state the problem clearly in a paragraph
- present rationale for specific questions being addressed
- blueprint for the literature review
- no single project can be expected to solve a problem in its entirety

Example of a Problem statement

- It is observed in recent past that the physicians are not interested to stay in rural areas for medical practice. The choice of working in rural areas is influenced by a multitude of factors. The motivation developed as a medical student is important in making this choice. Medical students showed low level of motivation for working in rural areas.

Research question

- Consider framing the problem as a question
- A narrow question that can be researched in detail is better than a broad one that can not be covered in full
- Research question(s) should be one that have not been fully answered in previous research so that the study is adding to the literature



Hypothesis

- Hypotheses are more specific predictions about the nature and direction of the relationship between two variables
- it reflects the expectation of outcome
- give a rationale why this hypothesis is important to investigate

Problem



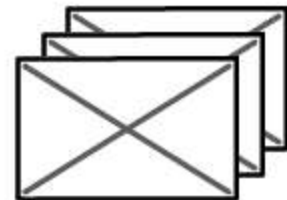
Hypothesis



Idea #1

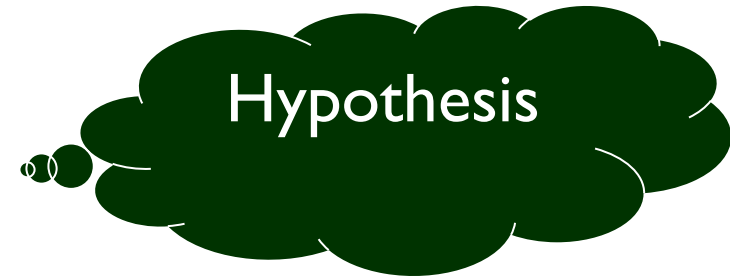


Idea #2

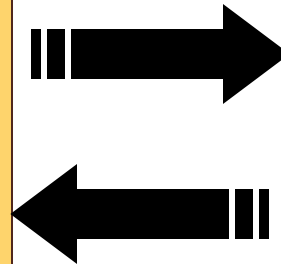


Research question and Hypothesis contd...

Research question



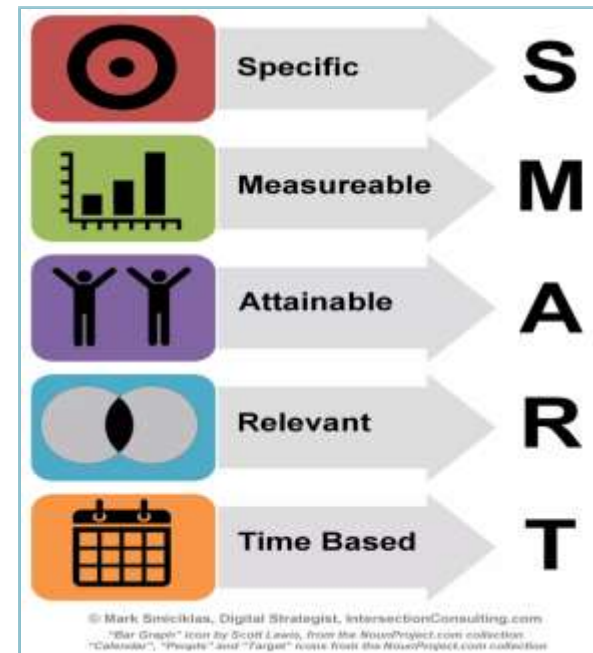
What are the factors not influencing medical students to work in rural areas following graduation?



Lack of infrastructures and poor hospital management are the factors that do not motivate the students to practice in rural areas

Research objectives

- **General objective:**
 - short but general statement of intent
- **Specific objectives:**
 - very specific statements that define the practical steps the researcher will take to achieve her/his aim(s)
- **Ultimate objective:**
 - implications of the study



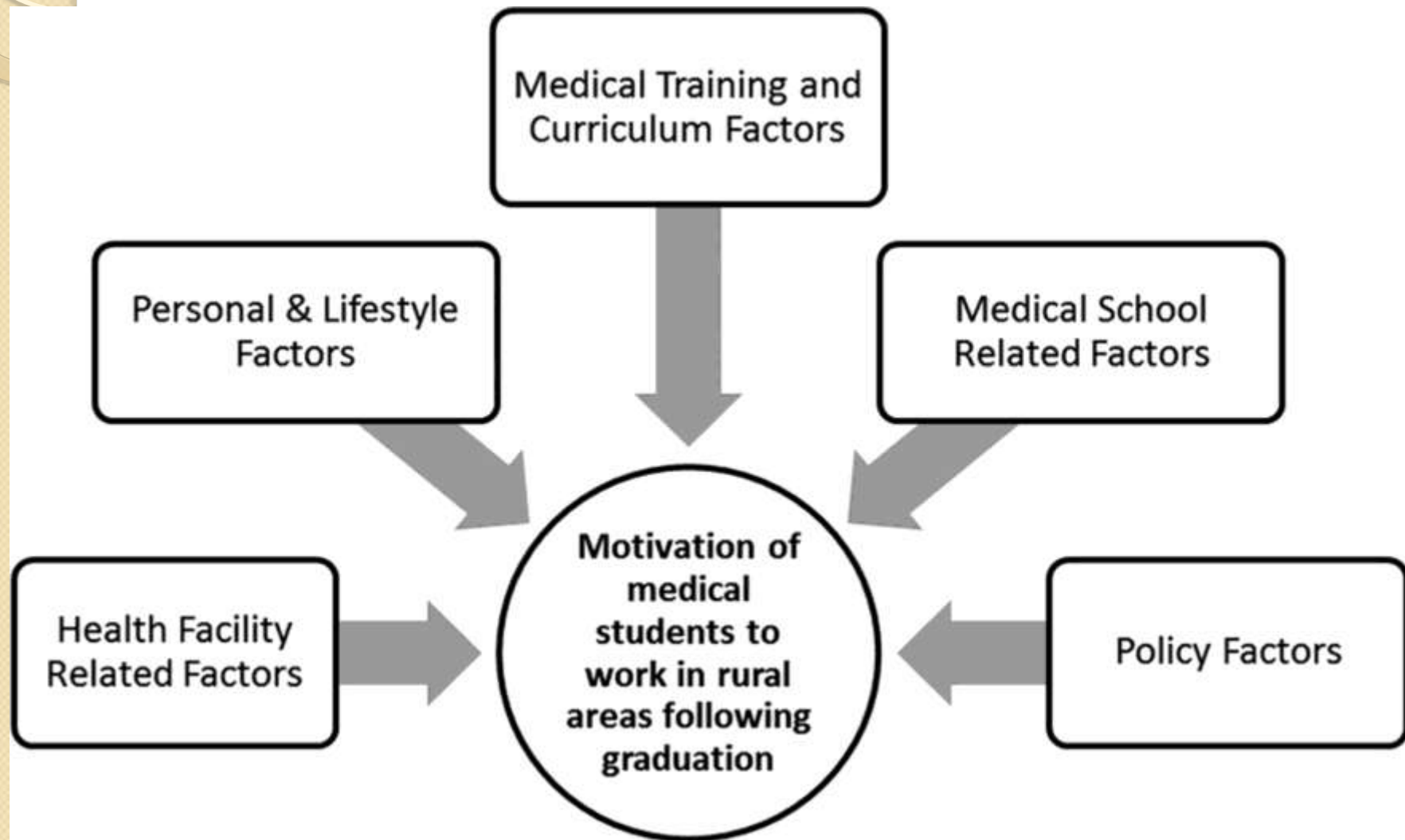
Outcomes

- The expectations from the results
- can be measurable
 - e.g.: the researcher will get a degree
 - new patent / discovery of a theory
- or, qualitative:
 - contribute understanding to subject /
new technology / application

Conceptual framework

- It is the researcher's own position on the problem and gives direction to the study
- The researcher can be able to show the relationships of the different variables graphically that he wants to investigate

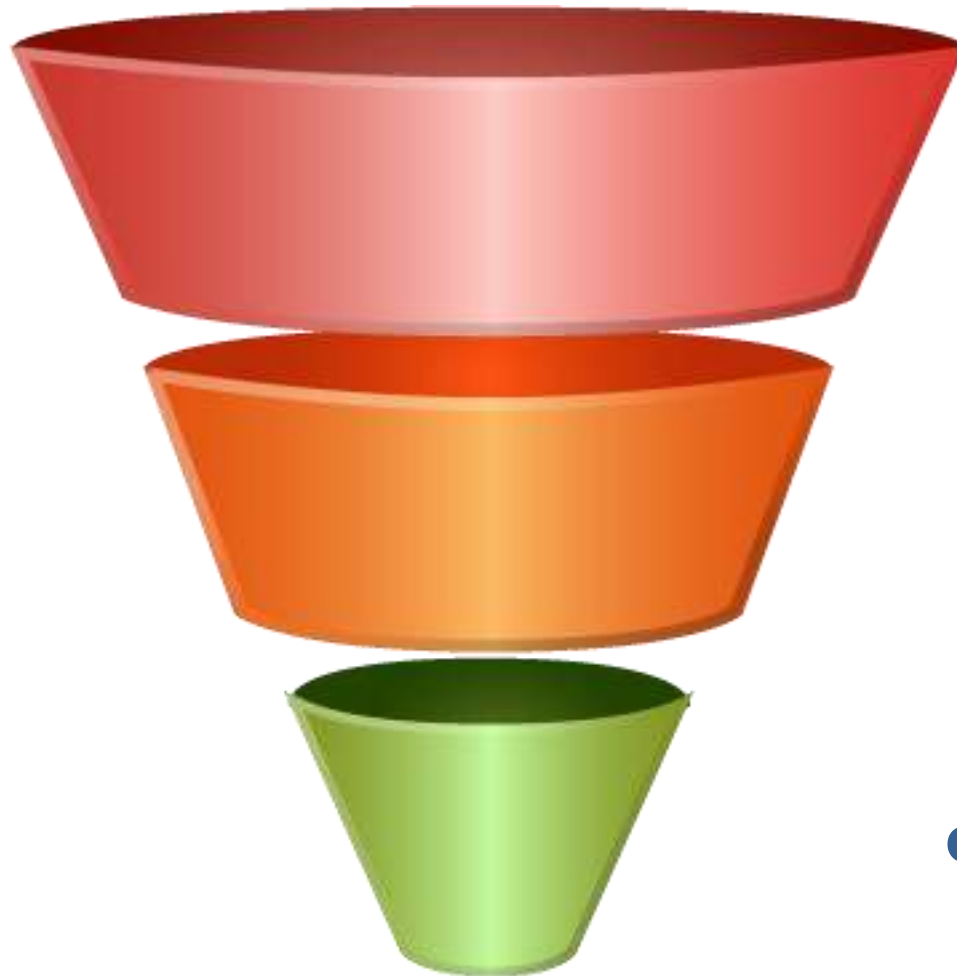
Example of a conceptual framework



Section 2: Literature review

- Literature review is a continuous and “unending” process
- It is done:
 - to understand the already known facts and concepts
 - to ‘discover’ what is as yet ‘undiscovered’
 - to avoid repetition of a work already done
 - critically analyze reported data to discover fallacies and inconsistencies as well as strength

The narrative of a good literature review



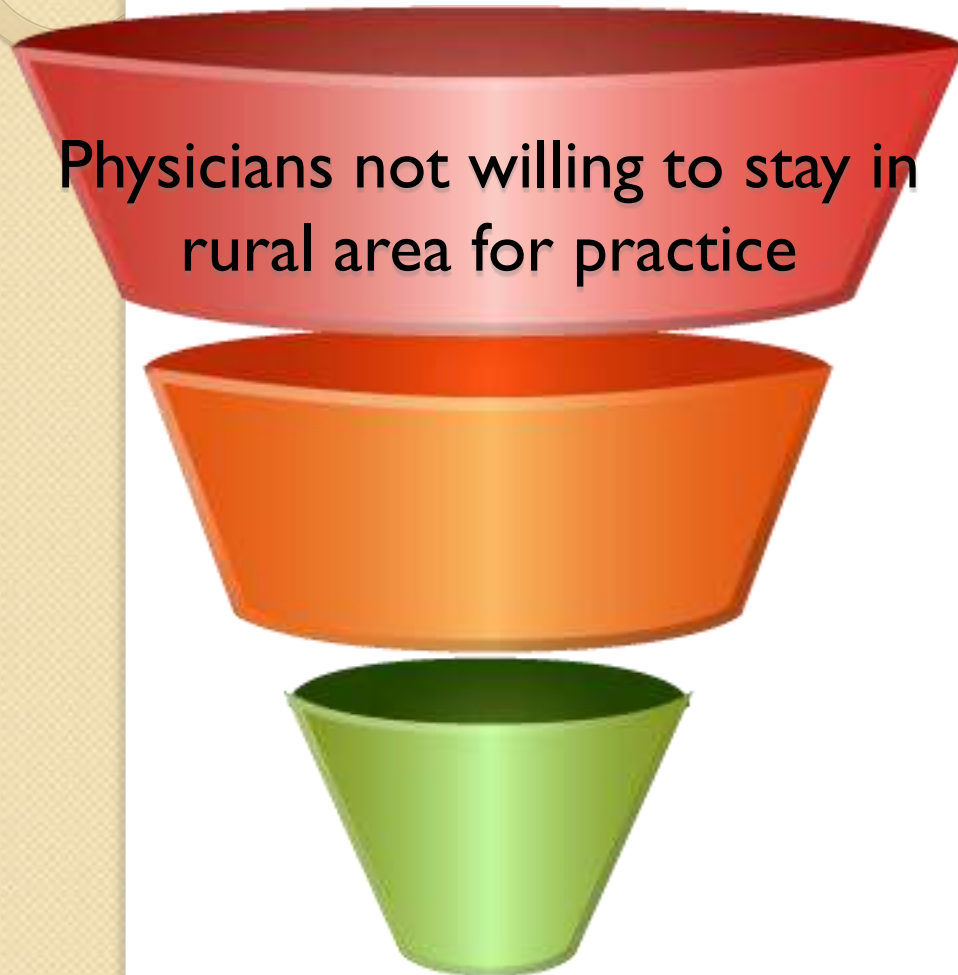
**Reader
knows**



**Reader
doesn't know**

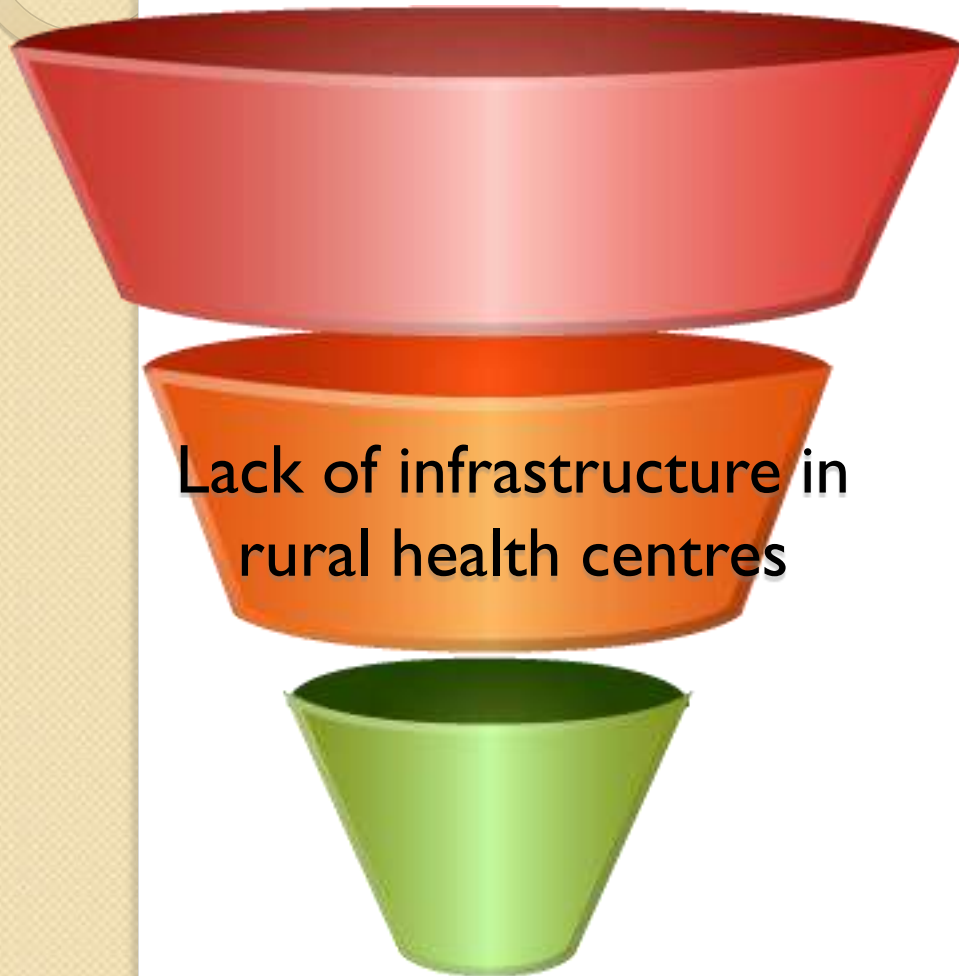
The narrative of a good literature review

contd...



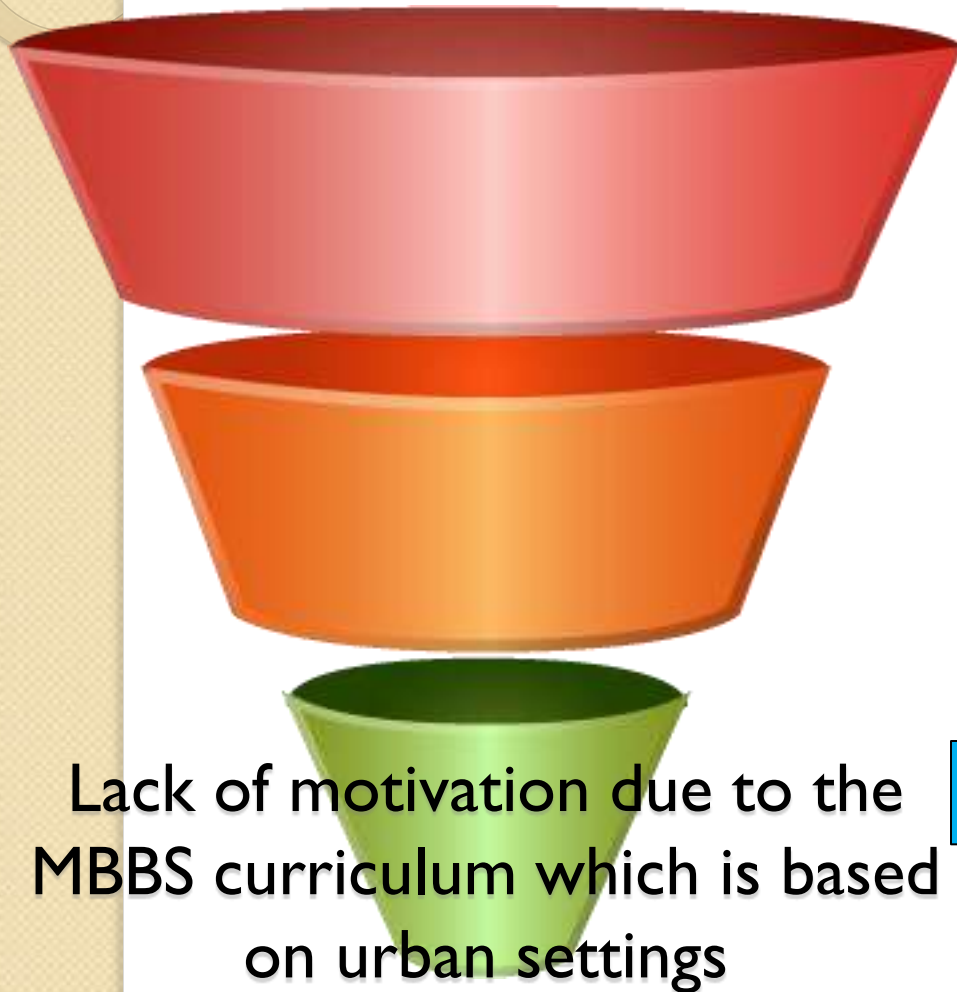
**Introduce the field:
broad focus**

The narrative of a good literature review contd...



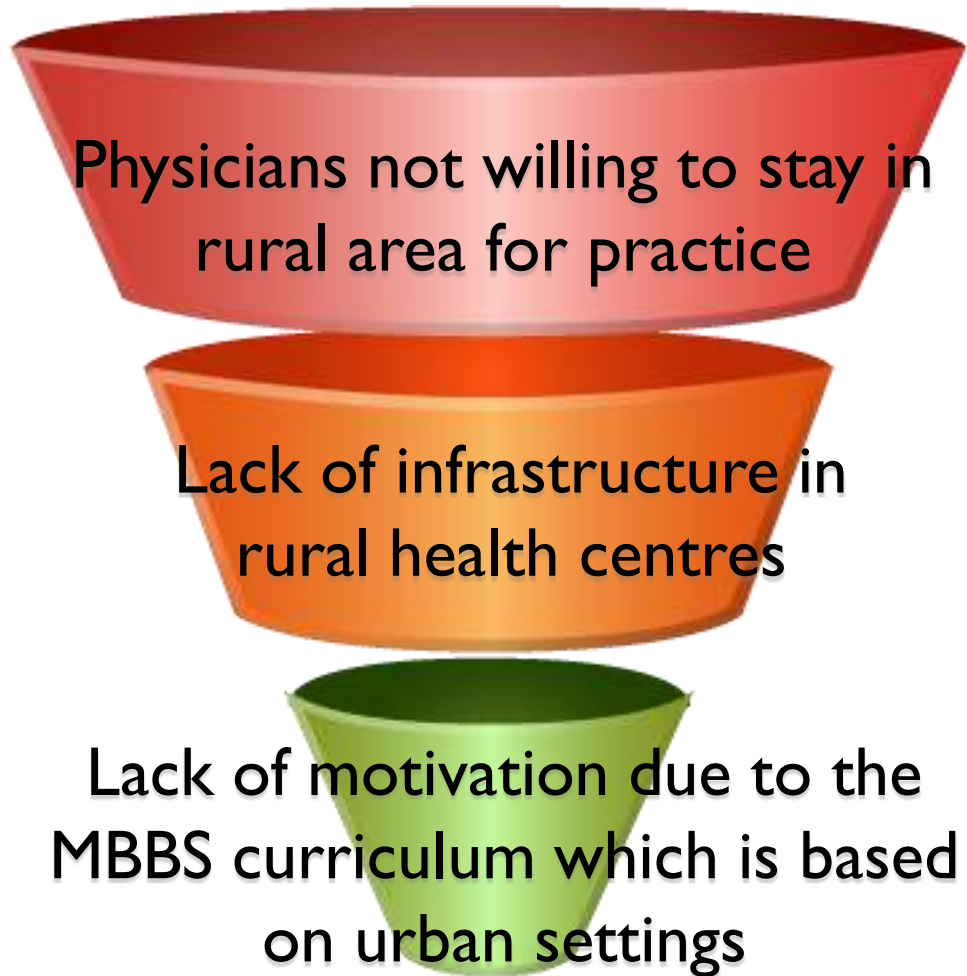
Focus on certain aspects in field of interest

The narrative of a good literature review contd...



End with gap analysis

Make a list of references



- Reference immediately after mentioning in the text; **not at the end** of paragraph
- Always **give credit** to the source



Section 3: Methods and materials

- section used to judge the validity of results
- prove feasibility of the study
- shows that the researchers understand the principles by using appropriate research design
- explains how the researcher will analyze the results, with good academic reasons for it's selections



MATERIALS &
METHODS

Methods section should have:

- **Study design**
- **Duration of the study**
- **Study place**
- **Study population**
- **Study sample with inclusion and exclusion criteria**
- **Sample size**
- **Sampling technique**
- **Data collection instrument**
- **Data collection technique**
- **Data analysis**

Limitations of the study

- any weaknesses in the planned approach
- and how the researcher plan to overcome those





Ethical

Legal

Section 4: Ethical issues

- Any study involving human or animal subjects will need ethical approval, usually from the ethics committee
- A standard form to complete, which may need to submit as part of the research proposal
- The ethics committee's role is to consider that what the researchers are doing is appropriate and proportionate to their research aims without causing any harm to the respondents

Section 5: Budget

- Shows how much money will be required to accomplish the various tasks of a study
- Prevents the researcher from overspending!
- Breakdown of cost to be shown; e.g:
 - salary for research assistant
 - travel
 - purchase of equipment
 - printing / xeroxing
 - consultancy charges
 - institutional overheads



Reference / Bibliography

- an standard referencing system must be used
- ex:APA, Vancouver, Harvard etc.
- check which system is required by the funding / approval authority

Bibliography



Appendix: Work plan & Questionnaire



- The proposal should include the sequence of tasks to be performed, the anticipated length of time required for its completion
- It can be presented in tabular or by flow charts
- A draft (semi-final!) questionnaire needed by most of the review boards



Month	Weeks	Literature review and discussion on methodology	Acceptance of the research problem and preparing Questionnaire	Pre-testing and finalization of questionnaire; Actual data collection	Data sorting, entry and analysis	Report writing	Report submission
November, 2017	1						
	2						
	3						
	4						
December, 2017	1						
	2						
	3						
	4						
January, 2018	1						
	2						
	3						
	4						
February, 2018	1						
	2						
	3						
	4						
March, 2018	1						
	2						
	3						
	4						
April, 2018	1						
	2						
	3						
	4						

Summary / Abstract

- Provide a brief (150 - 350 word) overview of the proposal
- Summarize important elements (introduction, statement of the problem, background of the study, research questions or Hypotheses, methods and ethical issues)



The standard format of a proposal

- **Front pages:** Title, details of the researcher, department, institution
- **Third page:** content/outline
- **Fourth page:** Abstract; not more than 350 words
- **Fifth – seventh pages:** Introduction
- **Eighth to tenth pages:** Literature review
- **Eleventh to fourteenth pages:** methods and materials; ethical clearance, budget
- **Last page:** References; around 10-20 in number
- **Appendix:** Timeline / Work plan and questionnaire



Evaluation of proposals and Improving the odds

Evaluation of proposals

- The objectives are likely to be **achievable** in the **given time period**
- The rationale for the proposed study is **reasonable**
- The scientific **design** is described and **adequately** justified
- Given budget is **feasible**

Improving the odds!

- The proposal is written in present and/or future tense (proposing what you will be doing)
- Literature review is written in past tense or present perfect tense
- Always check the university or grant-awarding body's guidelines for developing proposals
- Once “finished”, ask peers to proofread and reviewed critically
- Make sure that the mentor/supervisor approves it before submission

A decorative border of watercolor flowers and leaves in shades of yellow, pink, and green surrounds the central text. The flowers include large pink peonies and smaller yellow blossoms, with various green leaves interspersed throughout.

thank
you

Sources

- Busha & Harter. Research Methods in Librarianship; 3rd edition, 2012.
- Leedy & Omrod. Practical Research; 8th edition; 2015
- Khanam ST. Research Methodology; 3rd edition; 2016
- Hernon P & Metoyer-Duran C. Problem statements: An exploratory study of their function, significance, and form. Library & Information Science Research, 1993; 15, 71–92
- World Medical Association Declaration of Helsinki. Ethical Principles for Medical Research Involving Human Subjects. 2016
- Neville C. Referencing: Principles, Practice and Problems. RGUHS J Pharm Sci. 2012;2:1–8.



Steps of a research proposal

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12. **Annexure: Timeline / Work plan and Questionnaire**