

# **NOTES ON RESEARCH**

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# PRESENTATION CONTENTS

- 1. Research Methods**
- 2. Stages of Research**
- 3. Research Planning**
- 4. Research Design**
- 5. Research Protocol & Proposal**
- 6. Writing a dissertation/ Thesis**

# RESEARCH METHODS

## Definition of Research

**A quest for knowledge through diligent search, investigation or experimentation aimed at the discovery and interpretation of new knowledge**

# OBJECTIVE OF HEALTH RESEARCH

**Estimation: Prevalence and incidence**

**Association: Between variables**

**Evaluation: Intervention**

# STAGES OF RESEARCH

- **Planning**
- **Implementation of plan- data collection**
- **Data processing and analysis**
- **Report writing**

# STAGES OF RESEARCH:PLANNING

- **Identifying problem**

- thought organization, imagination

## **Knowledge building about the problem**

- discussion with experts
- literature review

- **Finding unanswered questions**

- uncertainty about something need to be resolved

## **Selecting question(s) for own research**

- selecting uncertain thing(s) from unresolved things

# STAGES OF RESEARCH:PLANNING

- **Stating the research question/questions**
  - hypothesis, objectives
- **Deciding appropriate research design and Methodology**
  - research type, ascertainment technique
- **Fixing data collection plan & instruments**
  - procedure, selecting/developing instruments
- **Organizational measures**
  - research team, finance, management, approval, information & communication

# STAGES OF RESEARCH:PLANNING

## Research Question(s)- RQ

### What is RQ?

The uncertainty about something that the investigator wants to resolve by making observations on own study subjects

A good RQ are:

Interesting

Novel

Ethical

Feasible

Relevant



# STAGES OF RESEARCH:PLANNING

## Research Hypothesis (RH)

**What is RH?**

**A transformation of Research Question to a testable prediction for research**

**Type of Hypothesis :**

**Null Hypothesis**

**Alternative Hypothesis**

# STAGES OF RESEARCH: PLANNING

## Research Objectives

A more action oriented transformation of the research question(s) and hypothesis

**Objectives are :**

General Objective

Specific Objectives

Ultimate Objective

# STAGES OF RESEARCH: PLANNING

**Research Question(s), hypothesis(s), and objectives of a proposed study determine the study design and methodology to be followed for that study**

# STAGES OF RESEARCH:PLANNING

## Study Design

**Scientific and ethical ways and methods of research to harvest valid and reliable information**

**Selection of study design depends on :**

**Types of problem**

**Knowledge about the problem**

**Resource available**

# STAGES OF RESEARCH:PLANNING

## Study Design

### Types of Study design

- **Observational & Experimental**
- **Descriptive & Analytical**
- **Retrospective & Prospective**
- **Cross sectional**
- **Case Control & Cohort**
- **Randomized Control Trial (RCT)**
- **One-stage & two-stage**

# STAGES OF RESEARCH:PLANNING

## Sampling

Sampling is the process of selecting a subset of population for the purpose of drawing conclusion

Purpose of sampling is to achieve maximum reliability within a given source

For sampling defining the following are necessary:

1. Population
2. Sample
3. Sampling frame
4. Sampling fraction
5. Sampling unit
6. Sample size
7. Participation rate

# STAGES OF RESEARCH: PLANNING

## Sampling

Common Sampling techniques are:

Non-probability Sampling  
Probability Sampling

# STAGES OF RESEARCH:PLANNING

## Sampling

**Non-probability Sampling are:**

- **Convenience Sample**
- **Consecutive sample**



# STAGES OF RESEARCH:PLANNING

## Sampling

### Probability Sampling are:

- Simple Random sampling
- Systemic sampling
- Stratified sampling
- Cluster Sampling
- Multistage sampling
- Consecutive sample

# RESEARCH PROTOCOL

**A written detailed scientific plan of the study**

**Elements in a Protocol are:**

**Introduction: Background & Rationale**

**Objectives: General & Specific**

**Methodology**

**References**

**Appendices**

# RESEARCH PROPOSAL

**A document written for the purpose of obtaining funds from granting agencies  
detailed scientific plan of the study**

**Proposal contains:**

**Study Protocol**

**Budget**

**Other administrative & supportive information**

# WRITING A DISSERTATION/THESIS

**“A written essay, treatise, or disquisition, especially one required by colleges and universities as partial fulfilment of requirement for a degree”**

**( Webster’s New 20<sup>th</sup> Century Dictionary  
5<sup>th</sup> ed 2005)**

**Dissertation and Thesis are the same and named  
as per requirement of the Institution for offering  
a Degree**

# WRITING A DISSERTATION/THESIS

## GENERAL ASPECTS

- Title Page- Title, Author, Institution, Year
- Declaration by the Researcher
- Supervisor's Certificate
- Approval page
- Dedication (Optional)
- Acknowledgement
- Contents with page number
- List of Tables
- List of Figures/Graphs
- List of Abbreviations & glossaries

# WRITING A DISSERTATION/THESIS

## TECHNICAL ASPECTS

### (STRUCTURE OF A DISSERTATION / THESIS)

- Title of the Dissertation /Thesis
- Abstracts & keywords
- Introduction
- Review of the Literature
- Methodology/ Materials & Methods
- Results
- Discussion
- Conclusion & Recommendation
- References/ Bibliography
- Appendices

# WRITING A DISSERTATION/THESIS

## Appendices

### Appendices contain:

- Questionnaire/ Instruments
- Data Sheet
- History Sheet
- Statistical Formula
- Photograph

***Let us open our  
inquisitive and  
analytical mind for  
evidence based findings***



**Thank you!**