

DESIGNING THE RESEARCH

Kim Carmela D. Co, RN, MSc



HOW ARE YOU FEELING TODAY?

😊	HAPPY	:)
😞	TIRED	:
😴	SLEEPY	:Z
😍	EXCITED	:\$
😋	HUNGRY	:O

LEARNING OUTCOMES

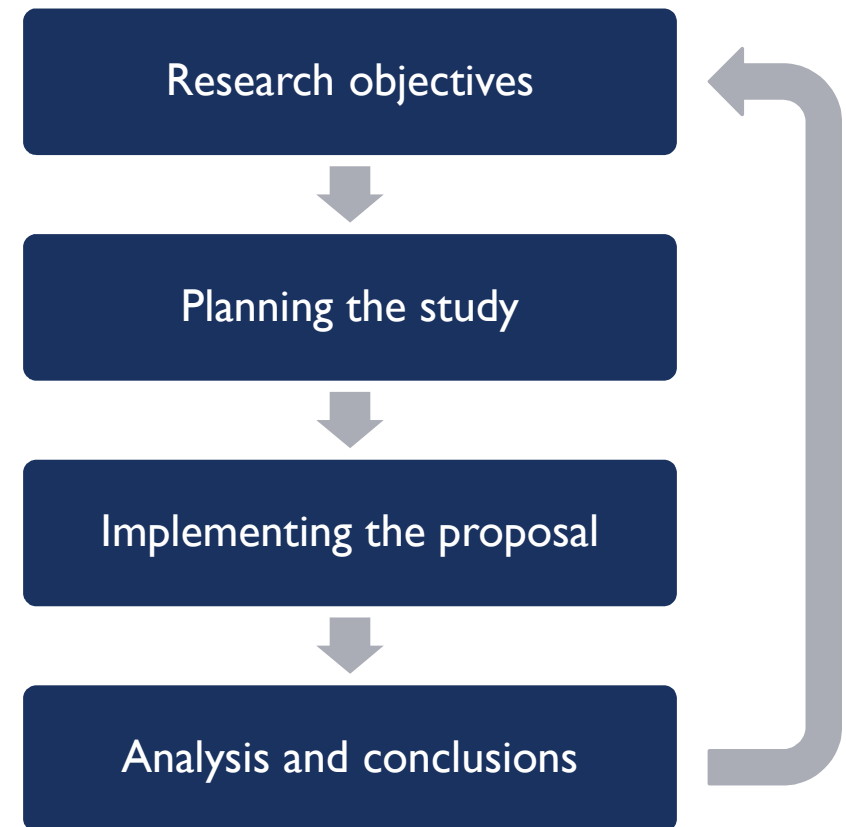
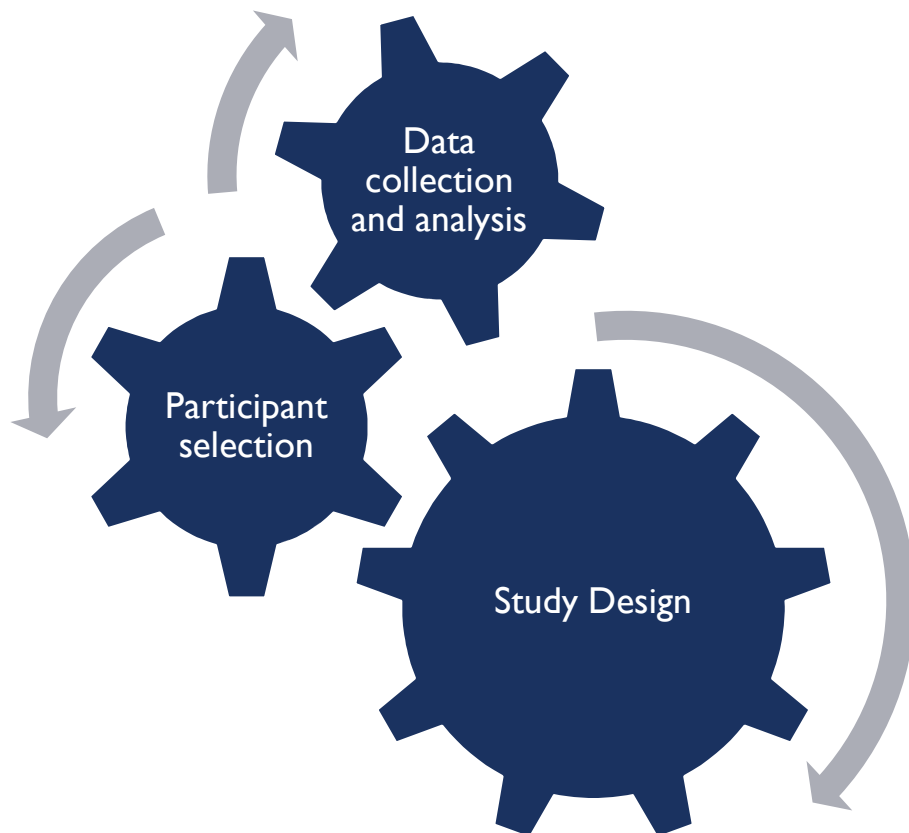
At the end of the session, the participants will be able to:

1. Differentiate descriptive studies from observational and experimental analytic designs
2. Describe the design elements that should be detailed in the proposal, including:
 - Research design
 - Target and study population
 - Participant selection and recruitment

At the end of the writeshop, the participants will be able to:

1. Select and describe the most appropriate research design given their study objectives
2. Describe how participants will be selected into their study

THE RESEARCH METHODOLOGY DESCRIBES THE “HOW”: HOW WILL YOU ANSWER THE STUDY OBJECTIVES?



THE STUDY DESIGN SETS UP THE FRAMEWORK FOR THE COLLECTION AND ANALYSIS OF DATA TO ATTAIN THE STUDY OBJECTIVES.

Appropriateness to attain objectives

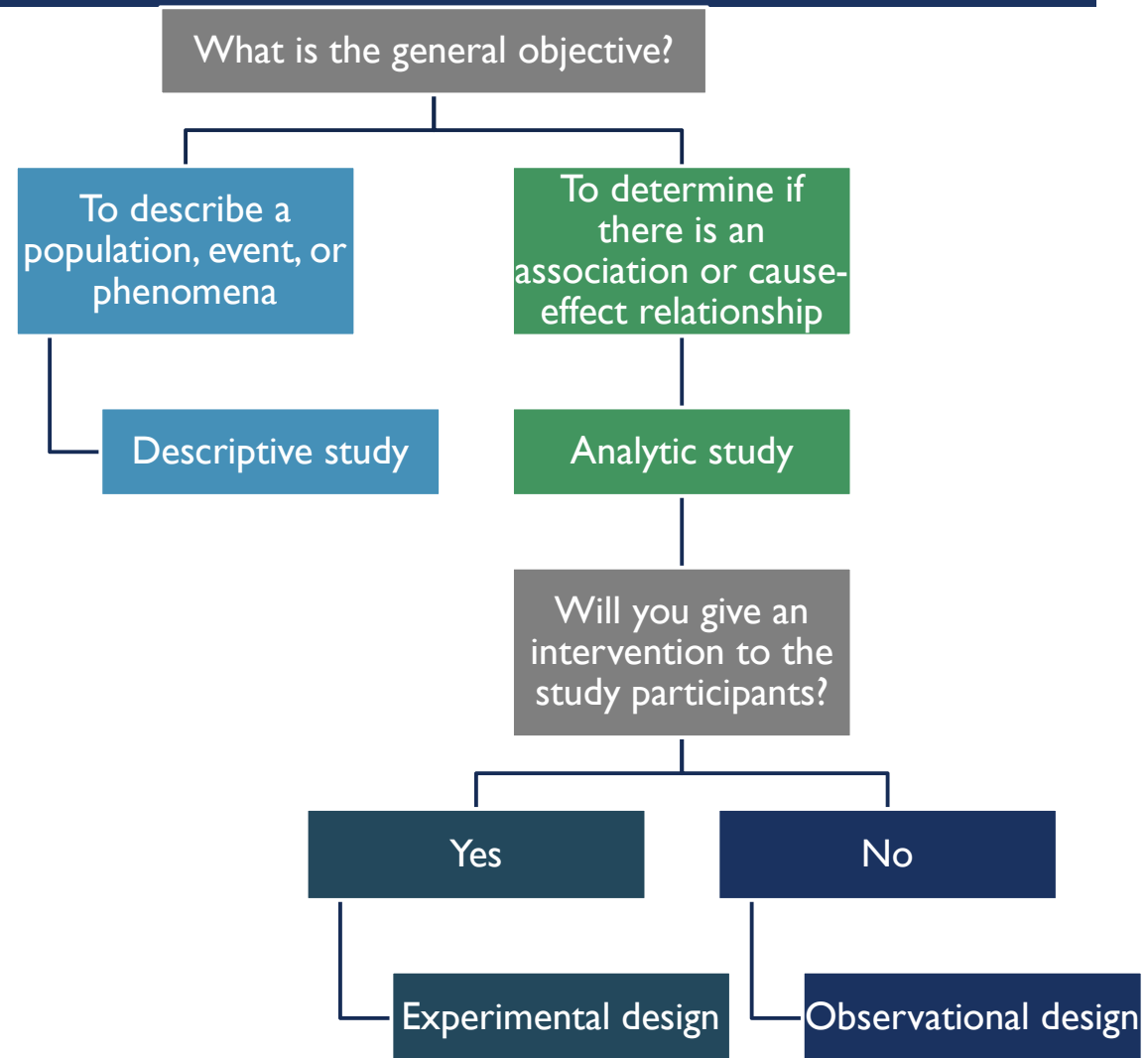
1. Does this design allow you to answer your study objectives?
2. Does this design answer the objectives with the least limitations?

Feasibility

1. How much time, manpower, resources do you have to do the study?
2. Can you access the study population (or the data)?

Different designs may be appropriate to answer the study objectives, and choice can be influenced by feasibility.

SELECT THE DESIGN BASED ON THE OBJECTIVE.



SOME RESEARCH DESIGNS ARE APPLICABLE DEPENDING ON THE DATA SOURCE TO BE USED FOR THE STUDY.

Further questions can help the researcher select the design:

1. Will the information purely come from existing literature?

Yes – Systematic review

2. Is the unit of analysis by group, and not individual level?

Yes – Ecologic study

DESCRIPTIVE STUDIES AIM TO DESCRIBE THE TARGET POPULATION.

Prevalence
studies

Case series

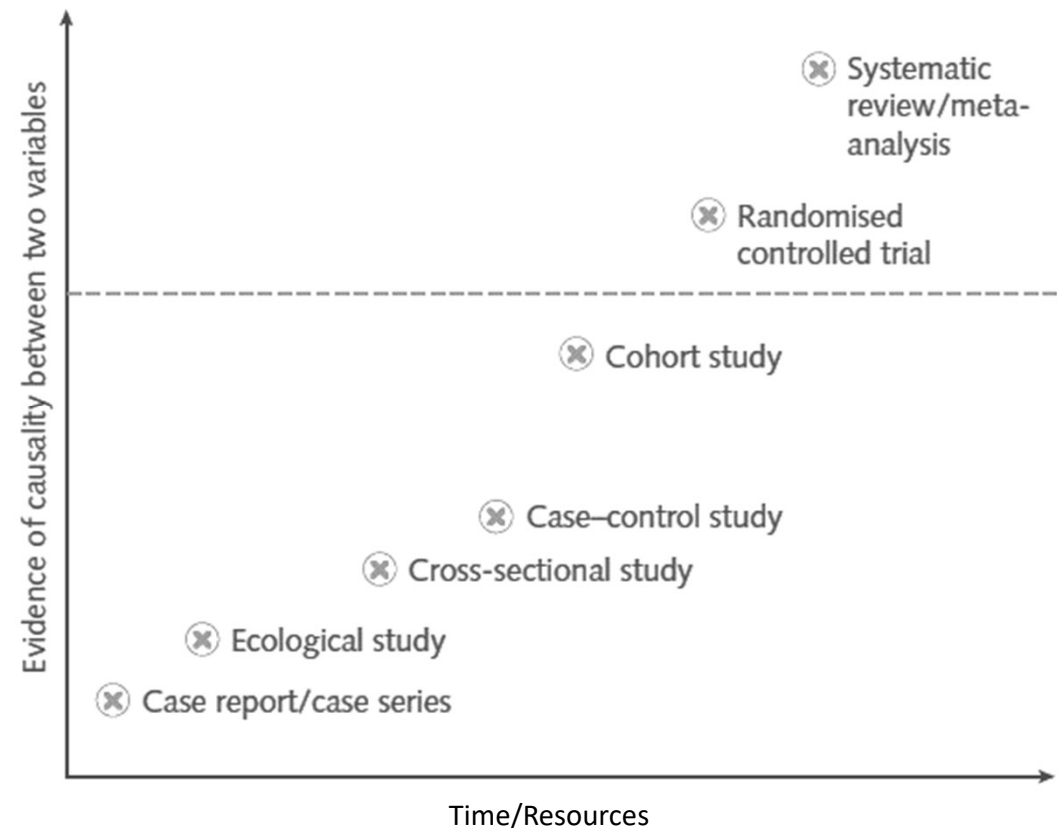
Ethnography

Grounded
theory

Services
policy reviews

ANALYTIC STUDIES AIM TO DETERMINE ASSOCIATIONS OR A CAUSE-AND-EFFECT RELATIONSHIP

Different designs provide different levels of evidence, assuming all studies were **DONE WELL**.



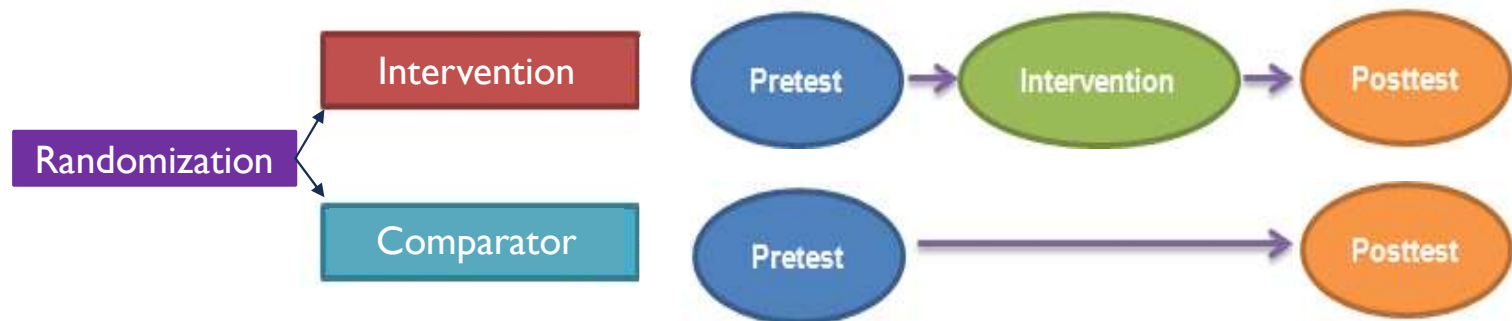
IN EXPERIMENTAL STUDIES, INVESTIGATORS STUDY THE EFFECT OF GIVING AN INTERVENTION TO STUDY PARTICIPANTS.

How many groups and types of intervention?

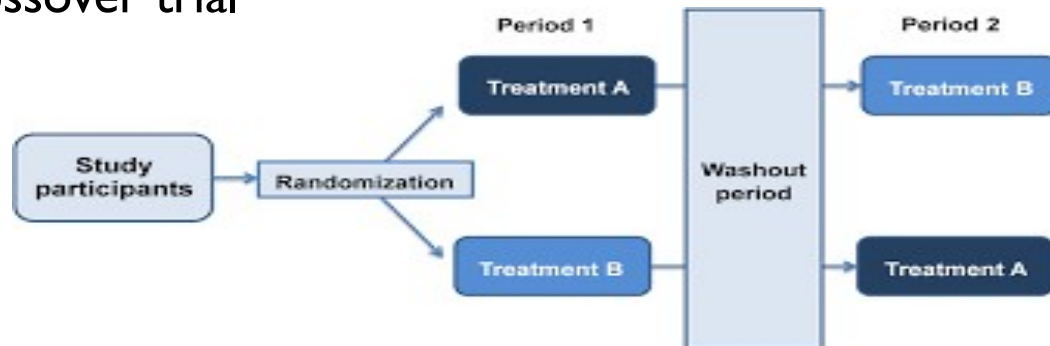
If >1 intervention, how will the intervention be assigned?

- Randomization?

Randomized controlled trial



Crossover trial



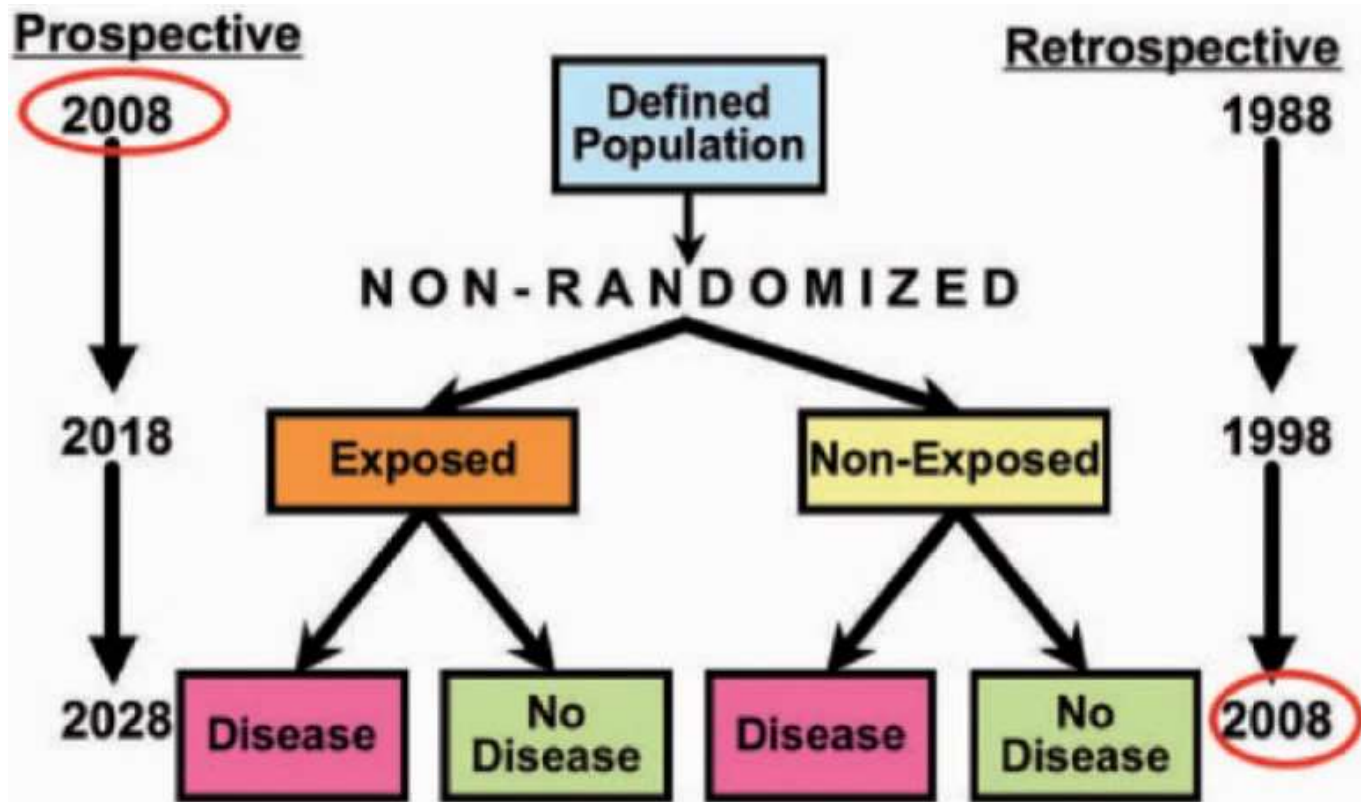
Source: <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0133023&type=printable>

FOR OBSERVATIONAL ANALYTIC STUDIES, SPECIFIC DESIGN DEPENDS ON THE VARIABLES BEING STUDIED.



1. Is the exposure or outcome variable **rare** in the target population?
2. **How long** does it take for the outcome to occur from time of exposure?
 - Will you be collecting data about the exposure and outcome variables at the **same time or at different times**?

COHORT STUDIES: INVESTIGATOR RECRUITS PARTICIPANTS BASED ON EXPOSURE.

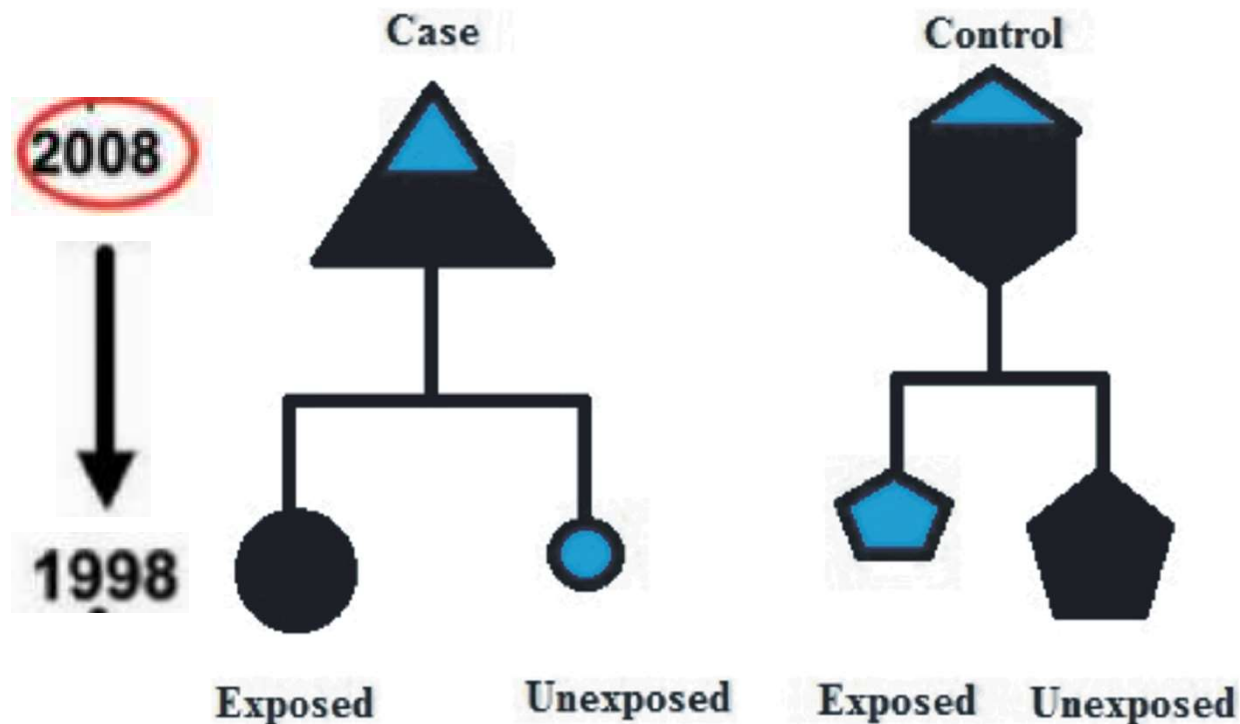


Source: Gordis, L. (2000). Principles of epidemiology 2nd Ed.

Most appropriate choice when:

- Exposure is rare
- Can trace participants from exposure to development of outcome

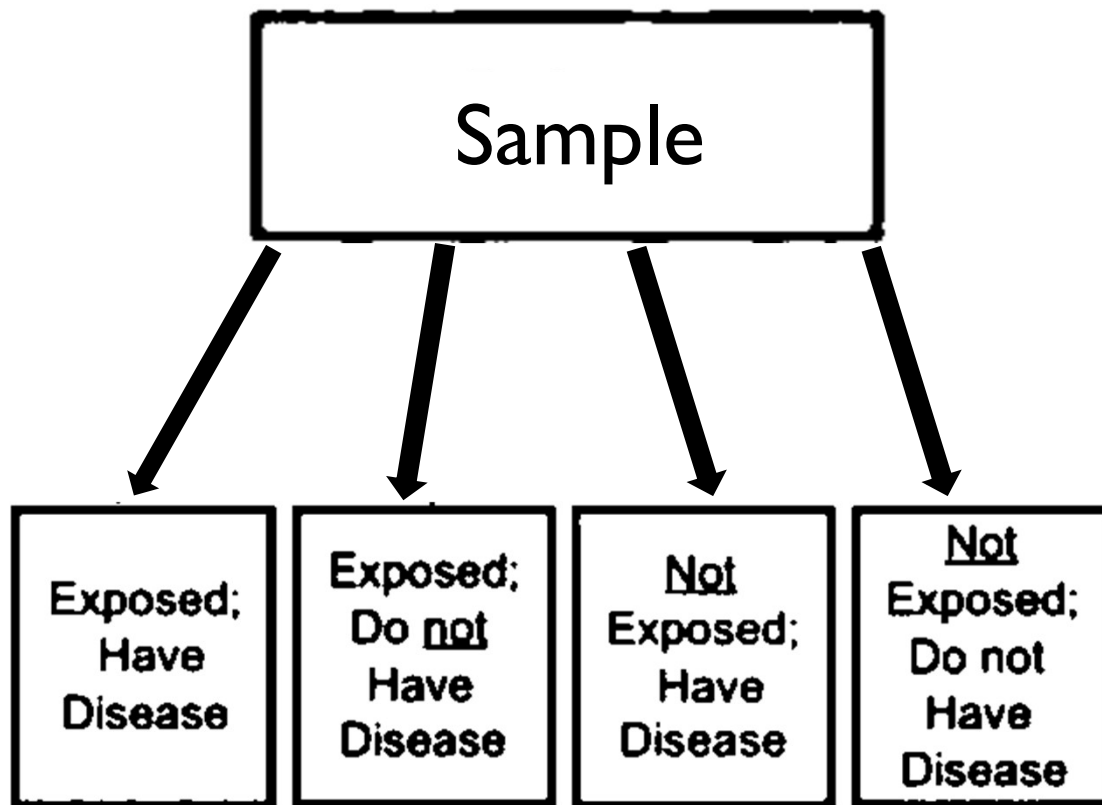
CASE CONTROL STUDIES: INVESTIGATOR RECRUITS PARTICIPANTS BASED ON OUTCOME.



Most appropriate choice when:

- Outcome is rare
- “Cases” are more accessible to recruit

ANALYTIC CROSS-SECTIONAL STUDIES: INVESTIGATOR RECRUITS A SAMPLE OF THE TARGET POPULATION



Most appropriate choice when:

- Exposure and outcome are NOT rare in the target population
- Multiple exposure and outcome variables studied

2008

Source: Gordis, L. (2000). Principles of epidemiology 2nd Ed.

EXAMPLE STUDY DESIGN SECTION IN THE PROPOSAL

A. Study Design

An analytic cross-sectional study design will be utilized in order to measure the exposure (peer support) and outcome (depression) at one point in time. With limited resources, it is most practical to use this study design in demonstrating the association between the variables of interest. Another reason for selecting this design is due to its capacity to have a large sample size with minimal loss to follow-up. Nonetheless, the researchers acknowledge that a disadvantage of this design is its inability to demonstrate temporality and causal inference.

Lifted from proposal by Bacsid, Lachica, & Latorre (2018)

TARGET POPULATION OF YOUR STUDY SPECIFIES THE POPULATION YOU WANT TO MAKE CONCLUSIONS ABOUT.

Specify using **person**, **place** (sometimes including **time**) characteristics.



Adolescent mothers in
Province X



Persons diagnosed with
Major Depressive
Disorder in Hospital X



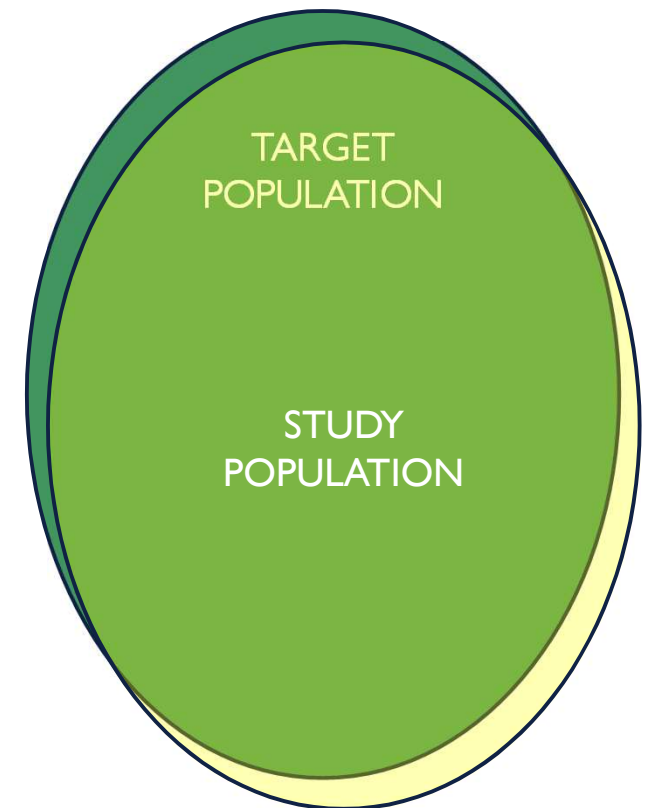
Philippine population

STUDY POPULATION IS THE POPULATION FROM WHICH YOU WILL RECRUIT PARTICIPANTS FOR YOUR STUDY.

Ideally, should be the same as the target population.

Provide **eligibility criteria** for the study population:

1. Inclusion criteria
 - Criteria to include in the study population
2. Exclusion criteria
 - Criteria to exclude from the study population
EVEN IF SATISFIES INCLUSION CRITERIA



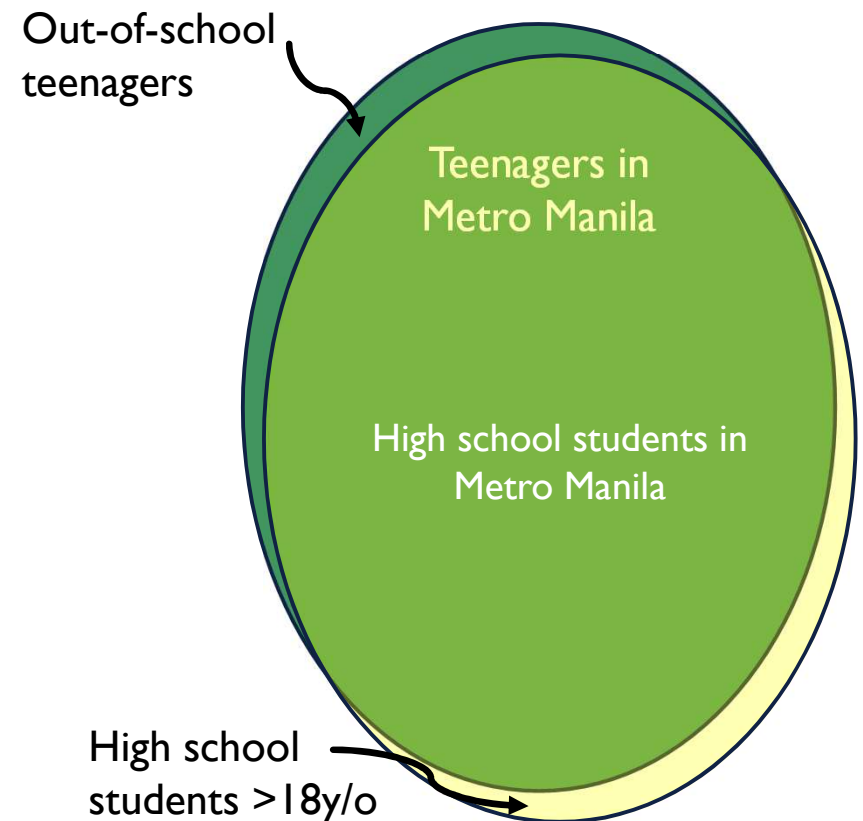
**EXAMPLE OBJECTIVE:
TO DETERMINE THE PREVALENCE OF DEPRESSION AMONG TEENAGERS IN
METRO MANILA**

1. Inclusion criteria

- Enrolled in a high school in Metro Manila for the AY 2008-09

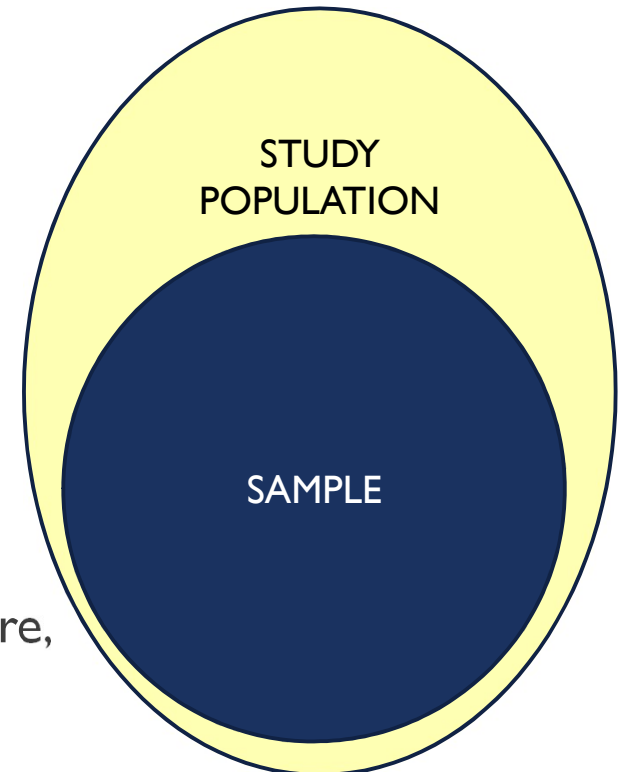
2. Exclusion criteria

- Older than 18 years old



DESCRIBE HOW STUDY PARTICIPANTS WILL BE SELECTED FROM THE STUDY POPULATION.

1. **Total enumeration:** include all
2. **Sampling:** select only a subset
(Need to detail step-by-step process of selection)
 - A. **Random sampling** using a sampling frame
 - B. **Based on some criteria**
 - First 100 people to enter the clinic
 - Include only those who satisfy specific characteristics (e.g. People with exposure, and those without exposure, matched by age and sex)

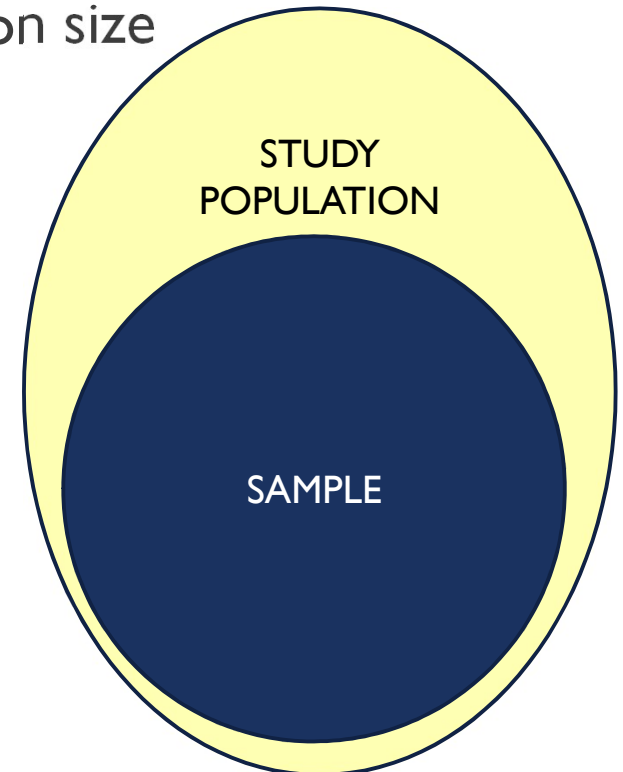


STATE HOW MANY STUDY PARTICIPANTS WILL BE INCLUDED.

1. Total enumeration: Expected study population size

2. Sampling:

- A. Sample size prespecified in the proposal
 - Sample size calculation (e.g. using OpenEpi)
 - Provide references from literature
- B. Not specified
 - Describe until when recruitment will be done (e.g. until data saturation point)

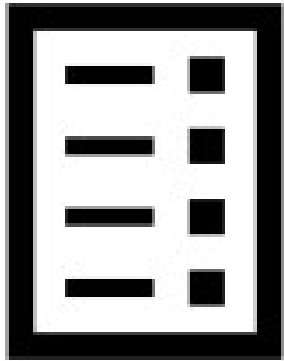


IF PRESPECIFYING, THE MINIMUM SAMPLE SIZE FOR THE STUDY SHOULD BE THE LARGEST COMPUTED MINIMUM SAMPLE SIZE.

Objectives	Computed minimum sample size
Specific objective 1: To estimate the	
Specific objective 2: To determine the	
Specific objective 3: To determine if	

Therefore, the minimum sample size to be used for the study is at least ____ people.

INCLUDE DETAILS ON THE RECRUITMENT PROCESS IF PRIMARY DATA COLLECTION WILL BE DONE.



**Sampling frame or
source of study
population members**




**Mode of invitation
(flyers, email
invitation, phone call)**



**Recruiting person
and informed consent
process**

SPECIAL CONSIDERATIONS: SYSTEMATIC REVIEWS

Detail the following in the methods of the proposal:

1. Eligibility criteria for studies
 2. Databases (and other sources) to be used
 3. Search strategy, including keywords
 4. Process for screening articles
 5. Process for assessing risk of bias
 6. Process for information retrieval
 7. Method of synthesis
- 
- How many people?
How to come up with final decision?
What tool/form will be used?

WHAT
WAS NOT
WRITTEN
WAS NOT
PLANNED.

