



University of Jordan  
Faculty of Medicine



Medical Committee  
The University of Jordan




# Community Medicine



Lecture Title:	Epid. Studies and review .....				
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<input type="checkbox"/> Slides	<input checked="" type="checkbox"/> Sheet		<input type="checkbox"/> Other: .....		
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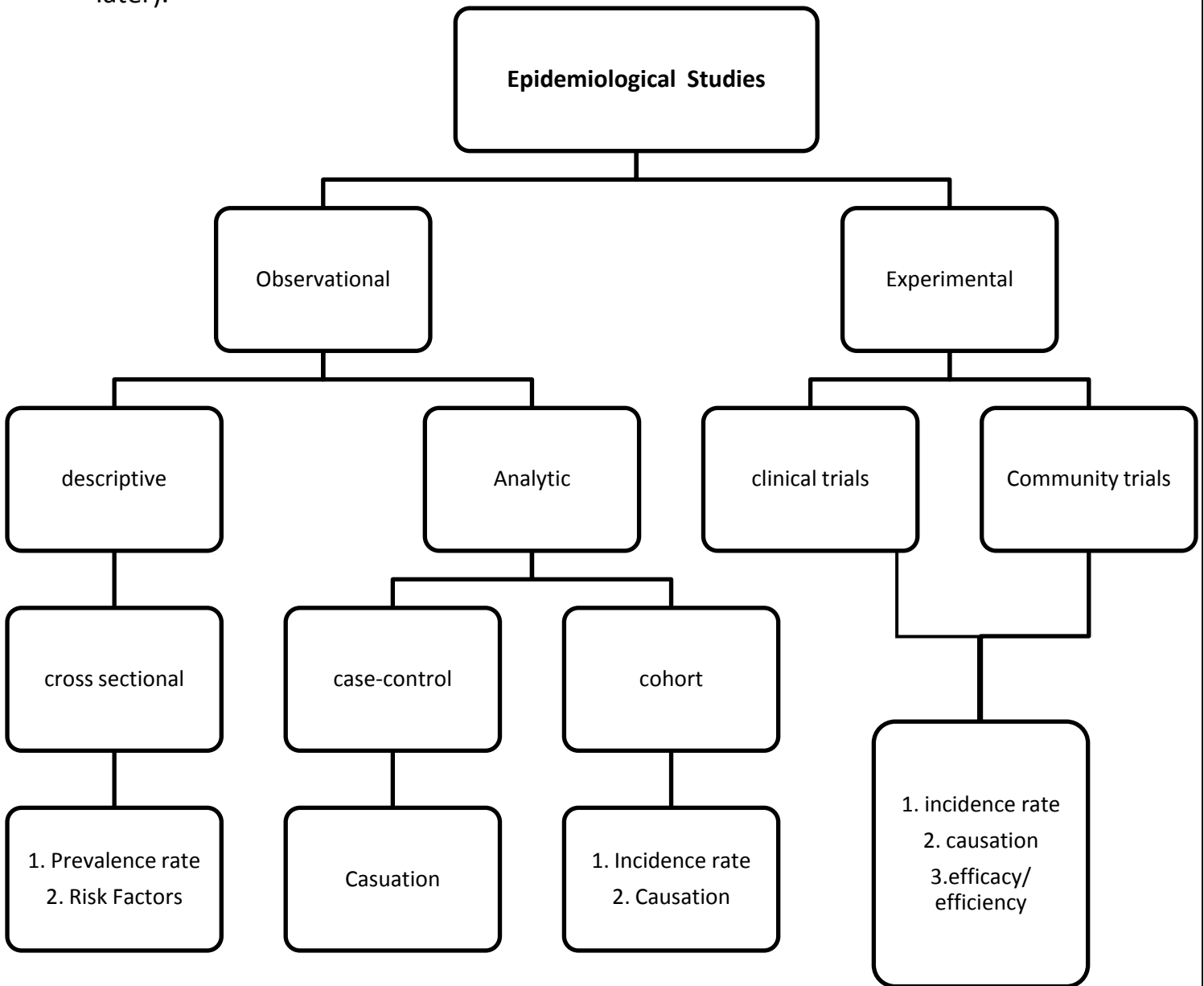
  
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W <http://medstudygroup.weebly.com>

**Community Medicine 8/12/2013**

**Epidemiological Studies and Their Objectives**

\* Epidemiological Studies Chart (the doctor mentioned that it is very important and a lot of questions in the exam depend on it).

\* This chart also contains the objectives of each study (they will be mentioned later).



# **Epidemiological Studies:**

## **1. Observational:**

### **a. Descriptive:**

Descriptive: Describe the occurrence of a disease according to person , place, and time.

#### **Cross Sectional Studies:**

- Very common; they are simple cheap and quick.
- In the U.K 60% of the publications are cross sectional studies.
- In Jordan almost all publications are cross sectional **Because :**
  1. The common reason; it's cheap, simple and quick.
  2. Most researchers don't know how to conduct case-control or cohort's studies; this is because back in time when these researchers studied community medicine there wasn't much emphasis on them.
- Objectives : 1)Prevalence rate 2) Risk Factors  
Ex) if Prevalence rate is  $\leq 0.05$  then the factor is a Risk factor.

### **b. Analytic:**

Studies held to know the reasons behind a certain finding.

(or) studies held to analyze the reason behind the occurrence of certain disease according to (For example ) an age group.

#### **Types:**

\*Case-control studies.

Objective : to find out (causation).

\*Cohort's Studies (*also called incidence studies*).

Objectives : to find out incidence rate of the disease & causation.

**Example:**

Myocardial infarction and age

- Cross sectional studies; show the relationship between MI and age. It found out that MI is highly fatal in ages 40-50.
- Analytical studies; show why the fatality rate so high in these ages by conducting either case-control or cohort's studies.

**2. Experimental:**

It is carried out on human beings.

For example if we discovered a new anti-biotic we should try it first on animals in labs then we try it on human beings to find out its efficacy (ability of the anti-biotic to cure a certain disease) and efficiency.

**Types of experimental studies:**

**a. Clinical trials:**

Applied on certain individuals (volunteers).

Determines efficacy and efficiency of the drug.

For example; if the efficacy of a drug was 80% it means that it cured 80% of cases.

Efficiency is how efficient is the drug compared to other drugs in the market.

Example: the efficacy of Ampicillin in treating Septicemia was 40%.

In this case you either: 1. Prescribe another antibiotic.

2. Combine Ampicillin with another drug.

**b. Community trials:**

Conducting a study on a selected group of people or a selected community.

**Difference between clinical and community trials:**

<b>Clinical</b>	<b>Community</b>
On specific individuals (Usually volunteers)	On specific groups/ communities

Example:

To measure the efficacy of a new vaccine against poliomyelitis we use clinical trial.

At the end of the clinical trial we will be able to measure the efficacy of the vaccine

if the efficacy was 80% → this means that this vaccine is able to prevent 80% of the cases of poliomyelitis.

Example :

Periodic Variation:

( ex: periodic variation of measles) means that measles increase every 3-4 years , so we'll find so many cases more than what we expect.

we expect the increase in cases by Epidemiological studies.

so if a doctor had had 50 cases in 2012 ,, and then he had 100 cases in 2013 he will call the ministry of health and tell them that there is an epidemic , but it is not ,, it's only a periodic variation.

**Objectives of these studies:**

- Cross sectional: 1. Find out prevalence rate of a disease.  
2. Determine risk factors of a disease.
- Case-control: Investigate the causes of a disease.
- Cohort's: 1. Determine Incidence rate.  
2. Causation.
- Clinical and community trials: 1. Determine Incidence rate.  
2. Causation.  
3. Determine efficacy/efficiency of a drug.

## Examples on exam questions

1. Which study do we use to determine the following in relation to smoking and tongue cancer?
  - If smoking is a risk factor for tongue cancer. (cross sectional)
  - Causes of this relationship. ( case-control / cohort or clinical trials but they are usually considered unethical and are usually not used )
  - Incidence rate. (cohort and clinical trials \*not used for the same previous reason\*)
2. A researcher is interested in studying smoking and bronchitis (another example : a researcher wants to prove that drinking coffee enhance the memory of Alzheimer patients )  
; these three tables are for three different studies regarding the subject
  1. Cross sectional
  2. Case-control
  3. Cohorts

\*this is just an example the dr. didn't actually draw tables\*

Please answer the following questions depending on the studies:

- Prevalence rate equals. (cross sectional table)
- We got a P value of 0.02 and it was determined as a risk factor, which study did we use to get this information. (cross sectional)
- AR percentage equals? (cohort)
- IR percentage equals? (cohort)
- IR is the? (Definition)
- Temporality can be achieved in? (case-control and cohort)
- Findings of this study are similar to findings of other studies; this statement is referred to as: (coexistence)
- Which one of these can we calculate from a certain study (for example which one of these can we calculate from a cross sectional study)