

EPIDEMIOLOGY IV

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Association & Causation

- ❖ Descriptive studies help in

- ❖ the identification of the disease problem in the community;
 - ❖ and by relating disease to host, agent and environmental factors modification or control of those diseases.

- ❖ Analytical & Experimental studies test the hypothesis

- ❖ Association may be defined as concurrence of two variables more often than would be expected by chance.

- ❖ In other words, events are said to be associated when they occur more frequently together than one would expect by chance.

Association does not necessarily imply a causal relationship.

Types of Association

Spurious Association

Indirect Association

Direct Association (Causal)

- One – to – One
- Multifactorial (web of causation)

Spurious Association

Less mortality in Home Births

Indirect Association

High Altitude ----- Goitre

High Sucrose in Diet ----- Coronary Heart Disease

Direct Association

One-to-One Causal Association

Multifactorial Causation

Bradford Hill's Criteria for Causation

1. Temporal Association
2. Strength of Association
3. Specificity of Association
4. Consistency of Association
5. Biological Plausibility
6. Coherence of Association

Uses of Epidemiology

1. Historical Rise & Fall of Disease in Population
2. Community Diagnosis
3. Planning & Evaluation
4. Evaluation of Individual's Risk & Chances
5. Syndrome Identification
6. Completing Natural History of Disease
7. Searching for Causes & Risk factors