SURVEY PROCEDURES

DEFINITION:

- Survey is an investigation in which information is systematically collected but in which experimental method is not used
- It is also called as “non experimental investigation.”

TYPES OF SURVEY

- **1] DESCRIPTIVE**
  It sets out to describe a particular situation e.g. Distribution of HIV in relation to sex, age & other characteristics.
- **2] ANALYTIC/ EXPLANATORY:**
  It tries to explain the cause of particular situation
  e.g. why the % of HIV is high in a particular area ?
  Depending on time period covered by observation, both descriptive and analytical survey are classified as
- Cross Sectional
- Longitudinal

- **BASIC ORAL HEALTH SURVEY:**
- It is define as survey to collect basic information about oral disease status & treatment needs i.e. needed for planning or monitoring oral health care programs.
- **PATHFINDER SURVEY:**
- It is a stratified cluster sampling technique which aims to include the most important population subgroup likely to have differing disease level

1. Pilot study	2. National path finder survey
- It includes only most important subgroups in the population	- It includes all the subgroups in population
-It includes one or two index ages usually 12 & one other age group	It includes at least three index ages
It provides minimum information	It provides maximum information
It requires additional data for accurate reliability	It does not require additional data

Index Ages

- 5yrs - Primary dentition
- 12yrs - Mixed dentition
- 15 yrs - Permanent dentition
- 35 - 44yrs - Periodontal diseases
- 65-74 yrs - Aging Diseases

SCIENTIFIC METHODS IN DENTAL EPIDEMIOLOGY:

- Establishing objectives
- Designing investigation
- Selecting sample
- Conducting examination
- Analyzing data
- Drawing the conclusion
- Publishing reports

1] ESTABLISHING OBJECTIVES

- When we are carrying out a survey procedure in any epidemiological condition we should know for what purpose or what are the objectives of those survey procedures.

2] DESIGNING INVESTIGATION:-

- **A. Types of study:-**
- 1. **Cross sectional or prevalence study** it is used to indicate occurrence of disease or condition in a population is expressed at a given point in time. It include all current cases (old + new) existing in a given population at given point in time.
- Prevalence = new + old cases of spec. disease in given period of time / total population at risk X 100
- **2.Longitudinal or Incidence study:-**
- It is defined as "the number of new cases of a specific disease occurring in a defined population during a specified period of time"
- Incidence = no. of new cases of specific disease in given period of time / population at risk * 1000

B. Method of Study:-

- **Case control Study:-**
- Often called retrospective study is the first approach to test casual hypothesis.
- This Study has 3 distinct features:-
- Both exposure and disease occurred before the start of the study.
- The study proceeds from effect to cause.
- It uses a control group to support an interference

Basic Steps in case control Study:-

- Selection of cases & controls.
- Matching
- Measurement of exposure.
- Analysis & interpretation

Ideal requirements for selection of cases:-

- The diagnostic criteria should be established well before the study and the stage of disease should be specified with selection of cases.
- Only newly Diagnosed cases, within specified period of time are eligible than old cases.
- Selection of cases: - The Cases may be drawn from hospitals or general population.

Criteria for Selection of control:-

- The control should be selected from same place, where the cases have been drawn / selected
- Perfect matching should be there:-

- Both the group should have similar characteristic such as Age, Sex, Dietary habits, Oral Hygiene habits, etc

Measurement of exposure: -

- It can be obtained by interview.
- Analysis and interpretation: - It is done to find out exposure rates among cases controls to suspected factors and estimation of disease risk associated with exposure.
- A Case control Study of Smoking and lung Cancer
- **Risk Factor (smoking)Cases (with Lung Cancer)Control(without Lung Cancer)**PresentabAbsentcd
- Frequency of smoking in
  Cases = a/ (a+c) controls = b/ (b+d)
- If the frequency of smoking a/ (a+c) is higher in cases than in controls b/ (b+d) an association is said to exist between and lung cancer.
- Association between tobacco chewing and development of oral cancer.
- **Risk Factor (chewing Tobacco)CasesControls**Present80(a)40(b)Absent10©50(d)
- Odds Ratio is calculated as
- Odds ratio = a*d/b*c = 80*50/10*40=10

Bias In case control Study

1. **Memory or recall bias:-**

When cases and controls are asked questions about their past history, it may be more likely for the cases to recall existence of certain events than the controls who are healthy persons.

2. **Selection Bias:-**

The cases and controls may not be representative of cases and controls in general population. The selection bias can best be controlled by prevention

3. **Interviewer's bias:-**

Bias may also occur when interviewer knows the hypothesis and also know who the cases are. This prior information may lead him to question the cases more thoroughly than control. This type of bias can be eliminated by double blinding

4. **Bias due to confounding:-**

Confounding is an important source of bias. This bias can be removed by matching in case control studies.

5. **Berkensonian Bias:-**

This bias arises because of the different rates of admission to hospital for people with different diseases. It is termed after Dr. Joseph Berkensonian who recognized this problem.

COHORT STUDY

- (Prospective Study, Longitudinal Study, Incidence Study, forward looking Study)
- Cohort is defined as group of people who share a common characteristics or experience within a defined time period (e.g. Age, Sex, Occupation, and Exposure to Drug or Vaccine)

CASE CONTROL STUDY	COHORT STUDY
Retrospective	Prospective
Proceeds from “Effect to cause”.	Proceeds from “Cause to Effect”
Disease has already occurred	Disease is expected to occur in future
Relatively easy to carryout	Time consuming and difficult to carryout
Useful for rare cases with small numbers	Suitable for common disease with common exposure
Can have only one outcome but multiple exposures	Can have multiple outcomes
Only derives odds ratio	Derives relative risk, Attributable risk etc.
Substantial Biases can occur	Biases are generally lower
Relatively less costly and no dropouts	Expensive and dropout rate higher
Involves Few number of subjects	Involves large number of subject

3] SELECTING THE SAMPLE:

- **A] Type of Sample:**

- **1] Selected Sample**
- It has 2 types
  I] Self selected and
  Ii] Selected by health workers

- **2] Random sample:-**
- One of the easiest ways is to use random numbers tables .Sample is taken randomly

- **3] Cluster sample:**
- Sample is taken from villages, buildings, and classes of schools/ families.

- **4] Stratified random sample:**
- If the condition is under investigation is known to be related to various factors such as age, sex, and area by residence. Then the population is divided into these groups and the random sample is taken for each group.

- **B] Stages of Sampling:**
- Depending upon condition or objective, sampling can be done into two or more stages
- E.g. primary sampling needs &
- Secondary sampling needs
- If the sample is larger there will be less error & if the sample is smaller there will be no error.

CONDUCTING EXAMINATION:

- It will include following steps
- Obtaining approval from authorities
- Budgeting
- Scheduling
- Emergency care & Referral
- Validity & reliability of data
- Training & calibrating examiners
- Personnel & Organization
- Instruments used:
  - Plane mouth mirror,
  - 30 per examiner
  - Periodontal probes
  - 30 per examiner
  - Several pairs of twizzer
  - sterilizer
  - Cotton & Gauge
  - Dettol
  - Mask
  - Gloves

9] Examination methods:

- **Type I -:** Involves complete oral examination using mouth mirror and explorer with all facilities
  It is used for intensive clinical studies of special groups
- **Type II:** Includes mouth mirror, explorer, x-ray & proper illumination.
  It is used in clinical trials
- **Type III:** Includes mouth mirror, explorer & proper illumination.
  It is used in epidemiological surveys
- **Type IV:** It is also called as screening procedure which includes tongue depressor & available illumination.
  It is used in sudden inspection of school children.
- **Indices:** Select the proper index as per need

5] ANALYZING DATA:

- If the methods recommended in WHO manual are followed computer analysis of collected data can be done.
- Different tables and graphical presentation of data enables meaningful conclusions to drawn.

6] DRAWING THE CONCLUSION

- Conclusions are specifically related to investigation that has been carried out

7] PUBLISHING REPORTS:

- It includes,

a. Statement and purpose of a survey:-

- It include a brief and clear description of the aims of the survey

b. Materials and methods:

c. Results:-

- It may be presented in several ways like a few diagrams, graphs, histograms, bar charts , or pie charts etc

d. Discussion and conclusions: -

- The result of a survey should be discussed under two headings
- The oral health status of the population should be compared with data from previous surveys of the same population or with the results of surveys in similar or neighboring population
- Treatment need of the population examine should be reported together with a brief discussion of the different treatment approaches possible and implications of each approach for the future oral health status of the population

e. Summary or Abstract:-

- The objectives of the study and number of people examine should be stated for the caries and periodontal disease in two or three age groups for whole samples. Any unusual or unexpected results obtained should be noted.

- THANK YOU .