SURVEY

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INTODUCTION

When patient first come to dental office the dental professional do examination and it starts with health, personal history and then goes to clinical assessment. 1ˢᵗ step in public health practice…parallels, Community examined

Word "survey" ☐ clinical assessment of extent & severity of disease in population

TERMINOLOGIES

SURVEY

- Survey is non experimental investigation in which information is systematically collected. There is no active intervention by the investigator.

ORAL HEALTH SURVEY

- Used to collect the information about oral health status and treatment needs and to monitor changes of levels & pattern

Aims

- Provide a systemic approach ☐ collection & reporting of data

- Data collected, wide range are comparable

- Oral health administration, standard measurement which serves as a basis for planning & evaluation

OBJECTIVES

- Provide a full picture of oral health status & needs

- Monitor changes of disease level & patterns

- Assess the appropriatness & effectiveness of the service

TYPES

- Descriptive/Analytic

- Cross-sectional / longitudinal

Descriptive survey which describe a situation

Eg- distribution of disease in relation to sex & age

Analytic/explanatory survey which explain the situation, Determinative process for formulating & testing hypothesis

Cross-sectional survey….instantaneous, simultaneous, prevalence

Information about situation at a single time

Longitudinal means time span

Data about events or changes over a period of time

USES OF SURVEYS

- Monitoring trends of oral health & disease

- Policy development

- Program evaluation

- Assessment of dental needs

- Providing visibility of dental issues

METHODS OF DATA COLLECTION

- Health interview survey (face-to-face)

- Health examination survey

- Health records survey

- Questionnaire survey

Health interview survey

Face-to-face, Invaluable method, subjective phenomena, morbidity, disability & impairment.

Disadvantage - Data obtained are not reliable, so combined with health exam. survey

Health examination survey

Information is more valid and it is Carried out by team □ doctors & auxiliaries

Disadvantage – Expensive, can't be used for extensive scale, it Requires consideration….providing treatment

HEALTH RECORDS SURVEY

Collection of data from health service records and it is the Most economical method

Disadvantages:

Data obtained are not population based, Reliability is a question, Lack of uniform procedure & standardization

QUESTIONNAIRE SURVEY

Standard method used in clinical, epidemiological, psychosocial & demographic research

Used for Measuring subjective phenomena

Types

- Mailed questionnaires
- Telephone interviews
- Face- face interviews

Face-to-face format allows

- ✔ Clarification of questions

- ✔ Probing….answers

- ✔ Use of visual aids

- ✔ High response rate

- ✔ Short time

ADVANTAGES OF QUESTIONNAIRE SURVEYS

- Simple

- Economical

- Standardization

- Anonymity

Disadvantages:

A certain level of education & skill is expected from respondents, Usually a high rate of non response

Questions

- Open ended (free response)

- Closed questions (fixed alternative)

Open ended questions

Subject answers in own words, for Eg: How many cigarettes do you smoke per day?

Useful for anthropological & social enquiries

Closed ended questions

Answered by choosing the fixed alternative responses, for Eg: How many cigarettes do u smoke per day?

Upto 10, 10-20, 20-30, more than 30

Advantage - Focused & pertinent to the objective of the survey, Easy to administer, Uniform

Precoded so easy to analyse in short time

2 types of scales are most commonly used

- Likert scale (summative)
- Guttman scale (cumulative)

Language and wording style

Language are pitched to the level of the respondent, it must be Common, everyday, conversational style

In cross-cultural studies - translated into local language

SEQUENCING OF QUESTIONS

- Introduction

- Cover sheet or identification page

- Warm up questions or statements

- Transition…smooth

- Requirements of questions

- Instructions

Steps in surveying

1) Establishing the objectives

2) Designing the investigation

3) Selecting the sample

4) Conducting the examination

5) Analyzing the data

6) Drawing the conclusions

7) Publishing the results

Establishing the objectives

Investigator must be absolutely clear about the objective, Hypothesis □ which is to be tested/ describing what is to be measured

Null hypothesis

Eg: There is no difference in the periodontal status of males & females aged 35-44 yrs in Mangalore

No comparison b/w groups….describing what is to be measured

Eg: To determine the prevalence of dental caries among 12 yr old school children in Mangalore

2)Designing the investigation

   Survey protocol includes - Main objective & purpose, Type of information which will be collected & method used, Sampling methods, Personnel & physical arrangements, Statistical methods, Provisional budget & time table

   Obtaining approval from authorities, Budgeting, Emergency care & referral

3)Selecting the sample

   Study – it is impossible to examine every individual so Sample must be choosen which is a part "universe", "reference" or "parent" population

Sampling frame □ listing of the members of the universe

Sampling □ process/technique of selecting a sample of app. characteristics & adequate size

Sampling methods

- Non probability – Quota, Purposive, Convenience
- Probability - Simple random, Systemic, Stratified, Cluster
- Others – Multiphase, Multistage

Non-probability sampling

Not truly representatives of population, less desirable

Case □ not able to obtain, random/stratified sample, too expensive, not generalize large population

Quota sampling

General composition of the sample – decided in advance, only requirement - right number of people, Done to ensure inclusion of a particular segment of the population

For e.g. – attitude of members of diff. states towards ban of smoking in public

Purposive sampling

Also known as snowball/chain referral sampling, it is done to serve a very specific need or purpose, E.g. search of high level businessman, Particularly useful in hard-to-track populations – Drug users

Convenience sampling

Including those whom researchers can easily get, Non-random type of sample, accidental sample. Volunteers would constitute convenience sample, All these non-probability sampling methods are not advised for scientific studies

Probability sampling

Recommended because each individual has known probability of being selected, Generalization can be made for precision & confidence

- **Simple random**
- **Systematic**
- **Stratified**
- **Cluster**

Simple random sampling

Each & every unit has equal chance of being included, Selection of unit is determined by chance only

Basic procedure:

□ 1. Prepare sampling frame

☐ 2. Determine size of sample

☐ 3. Select req no of units

To ensure randomness

Lottery method – in which population units are numbered on separate slips and shuffled followed by blindfold selection

Disadvantage – cumbersome if population is large

Table of random numbers – Random arrangements of digits from 0 to 9 in rows & columns, Selection done in horizontal or vertical direction

Advantage – randomness and eliminate personal bias

Disadvantage – increased cost & time

Systematic sampling

Obtained by selecting 1 unit at random & then selecting additional units in evenly space interval till sample of required size is got

Stratified sampling

In which Population is divided into subgroups/strata. Types – random, systematic

Stratified random sampling

Population subdivided into strata which is homogenous and Simple random sample is chosen, Eg: to determine prevalence of DMF teeth in different age

Advantage – representativeness, greater accuracy, wide geographic area can be covered

Limitation – care while dividing the population

Cluster sampling

Population are in natural groups/clusters after that simple random sampling is selected, first sample of cluster is selected and all units are surveyed

Advantage – simple, less expensive

Disadvantage – similar persons can't be generalized

Other sampling methods

Multiphase sampling

Part of information is collected from whole sample and part is from sub sample

Multistage sampling

In first stage, groups or clusters is selected and subsamples are selected in subsequent stages. State ☐ towns☐ neighborhoods

ERRORS – observer error, instrumental error, sampling error

4)Conducting the examination

It includes scheduling, instruments and supplies, infection control, examination area, training and calibrating examiners

KAPPA STATISTIC

To calculate intra & inter examiner reproducibility

Index- Chance-corrected proportional agreement and the values - +1 (perfect agreement) Via 0 (no agreement) To -1 (complete disagreement)

TYPES OF INSPECTION &EXAMINATION

TYPE 1- Complete examination

TYPE 2- Limited examination

TYPE 3- Inspection

TYPE 4- Screening – Mass, Multiple/Multiphasic, Prescriptive

Screening

"The use of presumptive methods to identify unrecognized health risk factors or asymptomatic disease in persons determined by prior studies to be potentially elevated risk & able to benefit from interventions performed before overt symptoms develop" - WHO, 1994

5)ANALYZING THE DATA

Assembling the materials and interpreting, analysis done in 2 components - Data processing (Statistical analysis) and Interpretation of results

6)DRAWING THE CONCLUSIONS & PUBLISHING THE REPORT

Conclusion made related to the investigation and there is no extrapolation, Final step is construction of a report with or without a set of recommendations. **Clearness & simplicity** is needed.

Advantages of survey

• Provide information about oral health

• Rates & indices can be calculated

• Associations & correlations can be identified & studied

• Reasons – utilization & non-utilization can be studied

• Information – reliable, complete & accurate

BASIC ORAL HEALTH SURVEYS

Used for collect information about oral health status & treatment needs to monitor changes in levels & patterns of disease, Special factors ☐ practical, economic survey sampling methodology called **Pathfinder method**

OBJECTIVES OF BASIC ORAL HEALTH SURVEYS

- Information about oral health status & treatment

- Monitor changes of levels & patterns of disease

- Assess appropriateness & effectiveness of services provided

- Plan or modify the oral health services & training programmes

- Determine extent of existing oral health sciences are coping

- Nature & extent for preventive, curative & restorative services.

- Determine the resources needed for oral health programme

Special considerations

- ✔ Diseases are age related

- ✔ Diseases exist in all population

- ✔ Dental caries ☐ irreversible

- ✔ Extensive documentation of variation of profiles of different socioeconomic levels & environment conditions

PATH FINDER SURVEYS

Practical & economical survey sampling methodology, Method used is **Stratified Cluster Sampling Technique**

Aim

- ☐ To include the most important population subgroups and differing disease levels

- ☐ Appropriate number of subjects in specific index age groups

Types

1)**Pilot survey-** 1 to 2 index age groups involved and we obtain only minimum data to commence planning

2)**National pathfinder survey-** all important subgroups are included, minimum of 3 and used for national wise planning

Pilot survey

A survey which is usually on a small scale carried out prior to the main survey, Primarily to gain information and to improve efficiency of main survey

✔ Used to test a questionnaire,

✔ To ascertain the time taken & cost,

✔ To determine most effective size

NATIONAL PATH FINDER SURVEY

It incorporates sufficient examination sites - subgroups, At least 3 of the age groups or index ages are included, Collection of data for planning & monitoring of services in all countries

Sampling sites – Eg: cities, small towns or ethnic groups

<u>5 years</u>

B/w 5th & 6th birthday, Level of caries in the primary dentition - exhibit changes, It is also the age at which children begin primary school.

<u>12 years</u>

Reliable sample through the school system. All permanent teeth are erupted except 3rd molar

Global monitoring age for caries for international comparisons & monitoring of disease trends.

<u>15 years</u>

Permanent teeth have been exposed to the oral env for 3-9 years.

For assessment of caries prevalence and periodontal disease indicators in adolescents.

<u>35-44 years (mean=40 years)</u>

Standar monitoring group for health conditions of adults.

Full effects of dental caries, level of severe periodontal involvement, & general effects of care provided can be monitored.

<u>65-74 years (mean=70 years)</u>

Changes in age distribution & increase in life span, data □Planning appropriate care for elderly

Monitoring the overall effects of oral services in a population

Number of subjects

Eg: sample design for a national pathfinder survey (10-15 sample sites)

URBAN

□   4 sites in the city (4 X 25= 100)

□   2 sites in 2 towns (2 X 2 X 25= 100)

RURAL

1 site in each of 4 villages (4 X 25 = 100) in diff. regions

- Total 12 X 25= 300

- For 4 index ages in population 4 X 300= 1200

Total - 25 subjects are sufficient if the disease level low to very low

Size – 40 to 50 if disease moderate to high

Prevalence of Dental Caries in India among the WHO Index Age Groups

Prevalence & mean DMFT of dental caries in India among the WHO index age groups (5, 12, 15, 35-44 and 65-74 years) various parts of India from January 2000 to April 2016

Result The mean deft/DMFT was 2.36, 1.95, 3.31 and 7.01 among 5, 12, 15 and 65-74

The mean prevalence of dental caries is almost similar at 5 & 12 years at 49% steady increase from 15 years (60%) to 35-44 years (78%) and peaks at 65-74 year group (84%).

Eastern and Western regions of India- 15 year old had higher caries prevalence & mean DMFT compared to the 12-year-old.

In North and South India…65-74- year-old had the highest caries prevalence of 84% and 85% respectively

WHO oral health assessment form

Universally accepted for recording methodology, **Standard codes** for Clear writing

unused sections canceled, Facilitate computer processing the result

WHO oral health assessment forms –1997, 2013

ORAL HEALTH ASSESSMENT FORM

1. Survey identification information
2. General information
3. Extra oral examination
4. TMJ assessment
5. Oral mucosa
6. Enamel opacities & hypoplasia
7. Dental fluorosis
8. CPI
9. Loss of attachment
10. Dentition status & treatment need
11. Prosthetic status
12. Prosthetic need

13. Dentofacial anomalies

14. Need for immediate care & referral

Identification & general information sections of form (boxes 1-4), Name of the country, List of examination sites, List of examiners, Dates of examination (5-10), Identification numbers (11-14), Examiner (box 15), Original duplicate examination (box 16), Name, Date of birth (boxes 17-20), Age (21 &22), Sex (23), Ethnic group (box 24), Occupation (box 25), Geographical locations (boxes 26 & 27)

- ☐ 00-98

- ☐ 99- if not recorded

Location type (box 28)

1. Urban

2. Peri urban

3. Rural

Other data (boxes 29 & 30), Contraindication to examination (box 31)

Clinical assessment

✔ Extra oral examination (box 32)

TMJ assessment (boxes 33- 36)

- ● Symptoms

  0- No symptoms

  1 - pain, clicking, difficulties

  9 – not recorded

- ● Signs

  0- no signs

  1- clicking, tenderness, reduced jaw mobility

  9- Not recorded

Reduced jaw mobility - < 30 mm (interincisal length)

- ● 0 - No abnormal condition

- ● 1 - Malignant tumor

- ● 2 - Leukoplakia

- ● 3 - Lichen planus

- 4 - Ulceration

- 5 - Acute necrotizing gingivitis

- 6 - Candidiasis

- 7 - Abscess

- 8 - Other condition

- 9 - Not recorded

Enamel opacities / Hypoplasia (Boxes 43-52)

Modified Dev. Defects of enamel (DDE index)

- 0- Normal

- 1- Demarcated opacity - Alteration in the translucency- white, cream, brown, yellow

- 2- Diffuse opacity - Linear, patchy, confluent distribution

- 3- Hypoplasia - Defect in surface with reduction in the thickness of enamel

- 4- Other defects

- 5- Demarcated & diffuse opacities

- 6- Demarcated opacities & hypoplasia

- 7- Diffuse opacity & hypoplasia

- 8- All three conditions

- 9 - Not recorded

Dental Fluorosis (box 53)

- 0 – Normal

- 1 - Questionable - Change in translucency, white flecks to spots

- 2 - Very mild - Small , opaque, paper white area (<25%)

- 3 - Mild <50%

- 4 - Moderate - Marked wear and brown stain

- 5 - Severe

- 8- Excluded

- 9- Not recorded

Community periodontal index (CPI) (boxes 54-59)

- Sextants

- Index teeth

  17 / 16   11   26 / 27

  (> 20yrs)

  47 / 46   31   36 / 37

- <20 yrs - 16, 11, 26, 31, 36, 46

- NO POCKET EXAMINATION for children under 15

Dentition status & treatment Need (boxes 66-161)

Treatment Need of individual teeth - Codes & criteria

0- none

P-preventive, caries-arresting care

F-fissure sealant

1-one surface filling

2-two or more surface fillings

3-crown for any reason

4-veneer or laminate

5- pulp care & restoration

Prosthetic status (boxes 162 &163)

Prosthetic need (boxes 164 &165)

Dentofacial anomalies (boxes 166-176)

Dental Aesthetic Index (DAI) criteria….used

Need for immediate care & referral (boxes 177-180)

- ❖ A life threatening condition

- ❖ Pain or infection…that needs immediate relief

- ❖ Any other conditions…

Surveys conducted in India

Two large scale Oral Health Surveys have been conducted:

 (i)   National Oral Health Survey & Fluoride Mapping by Dental Council of India in 2003

 (ii)   Oral Health in India: Report of multi-centric oral health survey by

   MoHFW in collaboration with Dental Department AIIMS in 2007.

National oral health program

Government of India…provide integrated, comprehensive oral health care, To achieve objectives we need manpower, equipment, consumables

Organizational Structure of the NOHP

- **National oral health cell**

- **State oral health cell (SOHC)**

- **District oral health cell**

Conclusion

Survey is more than collecting & arraying facts, Task □ key people to aware of the dental needs and the real focus is measurement of dental disease or morbidity.

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